

Summer 1997

Undergraduate and Graduate Courses

Day and Evenings

| | |
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Your Ticket to a Successful Career

University College

Summer Session I
May 19 – June 27

Summer Session II
July 7 – August 14

Classes Start
May 19, 1997

Register by phone, mail, or in person.
MasterCard and VISA accepted.

University of Massachusetts Lowell
University College/Division of Continuing Education
One University Avenue
Lowell, MA 01854-2881
(508) 934-2480

The University uses multiple mailing lists. If you receive a duplicate copy, please share it with a friend.

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UMass Lowell

UMass Lowell: Your Ticket to a Successful Career

Whether you are thinking about changing your career, or learning new skills for professional advancement, UMass Lowell has the courses, certificate programs, and degrees you need to advance in your career.

With the digital revolution upon us, companies are creating new job opportunities everyday for people who have the requisite skills and knowledge. From "Advanced Animation" to "JAVA programming", to "Designing Multimedia for the World Wide Web" to "Internet Systems Administration", and "Advanced Software Writing", you can learn new skills in emerging technologies that are in demand across the country.

With over 500 courses including graduate and undergraduate classes offered this summer you have a wide range of topics and in-depth learning experiences to choose from. Whatever your interest, you can choose from hundreds of courses for personal or professional enrichment on just about any topic.

If you are interested in finding out more about some of the key corporate issues in implementing the Internet, UMass Lowell is offering a new series of business seminars on "The Internet as a Strategic Corporate Weapon." (Page 18)

On the other hand, if you would like to take a non-credit course such as "Boating Skills and Seamanship", "Meditation", or "How to Open and Run a Bed & Breakfast Inn", UMass Lowell also has a number of personal interest subjects to explore. (Pages 15-16)

In addition, if a busy schedule or business travel keeps you from taking a class on campus, consider taking a course on-line with UMass Lowell's new CyberEd program. (Page 14)

We look forward to seeing you this summer!

P.S. For more information about our courses and programs, visit us at our world wide web site.

Phone-In Registration using the Voice Response System (Credit Courses Only): Dial (508) 934-2050/2049

Students who are presently enrolled at the University of Massachusetts Lowell, Division of Continuing Education and who have a Continuing Education PIN# (students registered during Fall and Spring), may now register for summer classes through the touchtone telephone registration system. This system is available during the following times: Monday-Thursday: 6:00 am-11:00 pm
Friday: 6:00 am-9:00 pm

To access the system, dial (508) 934-2050/934-2049

The Voice Response System will answer the call and ask if you want to access Day School (Option 1) or Evening Sessions (Option 2). Choose Option 2. You will now be asked for your ID# and if valid, your Continuing Education PIN#.

Hold flags will be checked and if none are found, you will be led through the Registration/Add/Drop process by a series of menus and options.

When you finish selecting your courses, you will be asked to pay by credit card and told the amount owed. Registration will be completed upon payment. If you hang up anytime during the call or do not complete the payment process, all of the ADD transactions will be undone.

If you experience any problems with this system, please report them to (508) 934-2588.

WATCH FOR!

Registration for Summer Session II via the World Wide Web: Visit our Web site at <http://www.uml.edu/DCE> for more details.

General Information

Office Hours:

University College Advising Center, Southwick Hall, Room 305, Monday-Friday: 8:30 am-5:00 pm

Office of Enrollment Services/Continuing Education, Room 223, Southwick Hall
Monday-Thursday: 8:30 am-8:30 pm
Friday: 8:30 am-5:00 pm

Holiday Hours:

May 26: Memorial Day observed
June 1: Commencement
July 4: University Closed

The week of June 30 through July 4 the Office of Enrollment Services/Continuing Education will be open from 8:30 am-5:00 pm

The week of August 18 through August 22, the Office of Enrollment Services/Continuing Education will be open from 8:30 am-7:00 pm

Phone Directory

(508) 934-2480 For general questions concerning Continuing Education (you will receive a recorded directory)
(508) 934-2474 University College Advising Center
(508) 934-2700 To register by phone with an on-line operator
(508) 934-2050 To register by phone using the Voice Response System
(508) 934-2588 Office of Enrollment Services/Continuing Education
(508) 934-2588 Certificate Line
(508) 934-4000 For general questions concerning UMass Lowell
(508) 934-3087 Continuing Education Fax Number

Visit our web site at <http://www.uml.edu/DCE>

Registration Information

Get a head start and register early. Although we cannot guarantee an opening in any class, your chances for being enrolled in the course of your choice are better when you register early.

We encourage you to mail-in, fax in or phone-in your registration in sufficient time to guarantee the class of your choice and to receive your classroom confirmation. See Academic Calendars on page 3 for appropriate registration deadlines.

Mail-In Registration:

1. Fill out the registration form and return it post-marked no later than the scheduled deadline.
2. Mail to: University of Massachusetts Lowell Enrollment Services/Continuing Education One University Avenue Lowell, MA 01854-2881
3. Payment must be made with the registration form, either by check, money order, VISA or MasterCard. Make checks payable to: University of Massachusetts Lowell.
4. Students will receive class confirmation, room assignment, receipt and ID by mail before the first class meeting.

Fax-In Registration:

Fill out the registration form and fax it to (508) 934-3087 no later than the scheduled deadline. Be sure to include your VISA or MasterCard number.

Phone-In Registration with an on-line operator:

1. Payment can be made by VISA or MasterCard only.
2. Call (508) 934-2700. Please refer to the Office of Enrollment Services/Continuing Education hours for phone-in registration times. The registration staff may take only registration information. If you have any questions concerning courses and academic programs, please call (508) 934-2481 or (508) 934-2474. Check page 3 for phone-in registration deadlines.

Office Walk-In Registration at the Office of Enrollment Services/Continuing Education, Southwick Hall, North Campus

Please refer to the Office of Enrollment Services/Continuing Education hours for walk-in registration. Payment must be made at the time of registration. Payment after 4:00 pm must be made by check, money order, VISA, or Master Card. Students will receive class confirmation, room assignment, receipt, and ID at the time they register.

Late Registration

In person late registration will take place in the Office of Enrollment Services. See page 3 for late registration dates. **Note: There is an additional \$50.00 fee for late registration.**

Due to the unique nature of the Community Education Noncredit Courses, noncredit registrations cannot be accepted after the first class meeting.

Final Drop/Add Period

See the appropriate academic calendar. Drop/adds can be processed in the Office of Enrollment Services/Continuing Education, Southwick Hall, North Campus.

Last Week to Withdraw with "W" Notation: Prior to the eighth class meeting. Students withdrawing from any class must officially notify the Office of Enrollment Services on forms provided by the Office. Verbal messages to faculty or staff do not constitute official notification.

Identification Card

Students registering in person will receive an ID card during the office walk-in registration and general registration. Students who register by phone, fax or mail will receive their ID by return mail with their letter of confirmation.

Students with Disabilities

A student with a disability who needs special arrangements should contact Susan Desmond at (508) 934-2465 early in the registration process. Special advising, registration assistance, preferential scheduling, and alternative examination procedures are available. Students must qualify for handicapped parking stickers. Special parking is also available on a temporary basis.

Academic Calendar and Registration Information

Summer Session I May 19 - June 27, 1997

Day classes begin on May 19.

M/W Evening classes begin on May 19 and include 3 FRIDAYS: May 30, June 13, June 27 at the regularly scheduled hours.

T/Th Evening classes begin on May 20 and include 2 FRIDAYS: June 6, June 20 at the regularly scheduled hours.

We encourage you to mail-in, phone-in, or fax-in your registration.

May 26: Memorial Day observed.

Mail-In Registration: March 31-May 12
Phone-In Registration: March 31-May 16
Fax-In Registration: March 31-May 16
Walk-In Registration: March 31-May 16

General Registration: May 12 & 13

May 12 & 13, 9:00 am-12:00 Noon and 5:00 pm-7:30 pm in the Office of Enrollment Services.

Late Registration: May 19 & 20

May 19 & 20, 9:00 am-12:00 Noon and 5:00 pm-7:30 pm in the Office of Enrollment Services.

Note: There is an additional \$50.00 fee for late registration.

Last Day to Add a Lab:

Day Classes: May 20

Last Day for Partial Refund:

(Before the 3rd class meeting)

Day Classes: May 21

M/W Evening Classes: May 28

T/Th Evening Classes: May 27

Last Day to Drop/Add Course:

Day Classes: May 22

(Before the 4th class meeting)

M/W Evening Classes: May 28

(Before the 3rd class meeting)

T/Th Evening Classes: May 27

(Before the 3rd class meeting)

Last Day to Withdraw with "W" notation:

Day Classes: June 4 for a 3-credit course;
June 2 for a 4-credit courses.

(Before the 10th class meeting)

M/W Evening Classes: June 11

(Before the 8th class meeting)

T/Th Evening Classes: June 10

(Before the 8th class meeting)

Final Examinations:

Day Classes: June 25 for a 3-credit course;
June 26 for a 4-credit course

M/W Evening Classes: Friday, June 27 at 7 pm

T/Th Evening Classes: Thurs., June 26 at 7 pm

NOTE:

M/W evening courses meet twice a week plus 3 Fridays: May 30, June 13 and June 27

T/Th evening courses meet twice a week plus 2 Fridays: June 6 and June 20

Summer Session II July 7 - August 14, 1997

Day classes begin on July 7.

M/W Evening classes begin on July 7 and include 2 FRIDAYS: July 18, August 1 at the regularly scheduled hours.

T/Th Evening classes begin on July 8 and include 2 FRIDAYS: July 25, August 8 at the regularly scheduled hours.

We encourage you to mail-in, phone-in, or fax-in your registration to guarantee the class of your choice and the receipt of your classroom confirmation.

Mail-In Registration: March 31-June 27
Phone-In Registration: March 31-July 3
Fax-In Registration: March 31-July 3
Walk-In Registration: March 31-July 3

Late Registration: July 7 & 8

July 7 & 8, 9:00 am-12:00 Noon and 5:00 pm-7:30 pm in the Office of Enrollment Services.

Note: There is an additional \$50.00 fee for late registration.

Last Day to Add a Lab:

Day Classes: July 8

Last Day for Partial Refund:

(Before the 3rd class meeting)

Day Classes: July 9

M/W Evening Classes: July 14

T/Th Evening Classes: July 15

Last Day to Drop/Add Course:

Day Classes: July 10

(Before the 4th class meeting)

M/W Evening Classes: July 14

(Before the 3rd class meeting)

T/Th Evening Classes: July 15

(Before the 3rd class meeting)

Last day to withdraw with "W" notation:

Day Classes: July 22 for a 3-credit course;

July 18 for a 4-credit course

(Before the 10th class meeting)

M/W Evening Classes: July 28

(Before the 8th class meeting)

T/Th Evening Classes: July 29

(Before the 8th class meeting)

Final Examinations:

Day Classes: August 12 for a 3-credit course;
August 13 for a 4-credit course

M/W Evening Classes: Wed., August 13 at 7 pm

T/Th Evening Classes: Thurs., August 14 at 7 pm

NOTE:

M/W evening courses meet twice a week plus 2 Fridays: July 18 and August 1

T/Th evening courses meet twice a week plus 2 Fridays: July 25 and August 8

Financial Information

Tuition is priced on the basis of credit hour unless contact hour is different. Tuition is then based on the listed contact hour.

Tuition and Fee Information

| | |
|--|----------|
| Registration Fee (non-refundable) | \$40.00 |
| Undergraduate Tuition | \$125.00 |
| (per credit/contact hour) | |
| Undergraduate Audit | \$125.00 |
| (per credit/contact hour) | |
| Late Registration Fee | \$50.00 |
| Laboratory Fee | \$50.00 |
| (refundable before first class meeting) | |
| Cybereducation Fee | \$50.00 |
| Graduate tuition (per credit/contact hour) | \$210.00 |

Students who have checks returned due to insufficient funds will be charged an additional \$30.00 for the processing of the registration.

Overdue Accounts

Students will be permitted to attend class and to utilize facilities only after they have cleared all their financial obligations to the University. In addition, student transcripts and diplomas will not be released unless all indebtedness has been discharged. Should it be necessary to utilize the services of a collection agency or attorney for an overdue student account, the student will be liable for any and all legal fees, commissions, and associated service charges.

Directed Studies

Directed studies and Practicums are considered Special Programs, and as such, tuition remission and certificates of eligibility cannot be accepted.

Veterans' Information

Veterans must be matriculated in an undergraduate program and have all appropriate paperwork on file at the Office of Enrollment Services/Continuing Education, including a DD214, an Admission Application form, and official transcripts from other colleges in order to receive VA benefits. Waivers cover 100% cost of tuition, are not retroactive and do not cover registration and other fees. In addition, veterans requesting benefits must check the appropriate line on the registration form. Please note: Veterans should use the mail-in, walk-in or fax-in options when registering (no phone in). For additional information call (508) 934-2588.

Third Party Payment

All students using company direct payment, military plans, state tuition waivers, or veterans' waivers must include the appropriate forms or authorizing letters with their registration, or have them on file. No tuition refund is awarded for late submission of eligibility form. Students receiving company reimbursement must prepay their own tuition. For additional information call (508) 934-2479.

Senior Citizens

Senior citizens (60 years or older) may attend classes in Continuing Education credit programs tuition-free provided that there are sufficient tuition paying students enrolled to bear the cost of instruction and provided there is space available. Please note that waivers are not retroactive and do not cover registration and other fees. Proof of birthdate must be provided at the time of registration.

Tuition Refund Policy for Credit Courses

Any eligibility for tuition refund is based on the academic calendar, not class attendance, and is pro-rated as follows excluding fees:

| | |
|---------------------------------------|-----------|
| Withdrawal before first class meeting | 100% |
| Before the second class meeting | 90% |
| Before the third class meeting | 50% |
| After third class meeting | No refund |

All fees will be refunded if Continuing Education is responsible for cancellations.

Students withdrawing from any class must officially notify the Office of Enrollment Services/Continuing Education on forms provided by the Office. Verbal messages to faculty or staff do not constitute official notification.

CHECK OUT OUR WORLD WIDE WEB SITE!

Continuing Education information can now be retrieved over the World Wide Web. Dial us at "http://www.uml.edu/DCE" for additional information on current course schedules, course descriptions, degree or certificate program information, and more!

This newspaper is printed at no cost to the Commonwealth of Massachusetts. The University of Massachusetts is an Equal Opportunity/Affirmative Action Title IX, H/V, ADA 1990 Employer and Executive Order 11246, 41 CFR60-741 4, 41 CFR 60-250 4, 41 CFR 60-1 40 and 41 CFR 60-1, 4 are hereby incorporated.

Every effort has been made to ensure the accuracy of the information presented in this bulletin. However, the Division of Continuing Education reserves the right to implement new rules and regulations and to make changes of any nature in its program, calendar, locations, tuition, and fees. Whenever possible, appropriate notice of such changes will be given before they become effective.

In registering for courses, each student assumes full responsibility for knowledge of and compliance with the definitions, regulations, and procedures for the University as set forth in the appropriate publications and bulletins.

Tuition Refund Policy for students receiving Title IV Financial Aid and enrolled in a degree or specifically designated certificate program
Refunds for Title IV financial aid recipients will be processed according to Federal guidelines and institutional policy. Please call the Financial Aid Office at (508) 934-4220 if you have any questions.

Tuition Refund Policy for Noncredit Courses
Participants who withdraw before the first class meeting will receive the total amount paid excluding the \$15.00 registration fee. Participants who withdraw following the first class meeting will receive a 50% refund excluding the \$15.00 registration fee. No refunds are given for withdrawal after the second class meeting.

Student Health Insurance
Effective September 1, 1989, every student who is enrolled in at least 9 semester hours or more in a degree program is required by Massachusetts State legislation to participate in a qualifying student health insurance program. The cost of this insurance is \$289.00 for the spring and summer semesters and payment of the appropriate fee will be required at registration. To waive participation in this program students must fill out a form at registration showing equivalent coverage. Name of the insurance company and policy number are required information on the waiver form.

Academic Information

The University of Massachusetts Lowell is accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England states. Membership in the Association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators. The programs in Civil Engineering Technology, Electronic Engineering Technology, and Mechanical Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Catalog
Students should refer to the catalog for rules, regulations, program outlines, and course descriptions. The 1994-1996 Division of Continuing Education catalog is available in the Advising Center and the Office of Enrollment Services. Catalogs are free upon request. Call (508) 934-2480. Catalog information may also be accessed at <http://www.uml.edu/DCE>.

Admission to a Certificate or Degree Program
Students who have graduated from high school or who have earned a high school equivalency certificate are invited to apply for programs leading to a Certificate or an Associate or Baccalaureate degree. Applications for all programs are accepted on a rolling admissions basis. Contact the Division of Continuing Education Office at (508) 934-2588 (certificate programs) or (508) 934-2474 (degree programs) for an application and information on the application procedure. There is no fee to apply.

The following degree and certificate programs are available on a part-time evening basis:

College of Engineering

- Associate's Degrees**
Civil Engineering Technology
Civil Engineering Technology:
Water Treatment Option
Civil Engineering Technology:
Wastewater Treatment Option
Civil Engineering Technology:
Surveying Option
Electronic Engineering Technology
Mechanical Engineering Technology

- Bachelor's Degrees**
Civil Engineering Technology
Civil Engineering Technology:
Environmental Option
Electronic Engineering Technology
Industrial Technology: Manufacturing,
Plastics, Water/Wastewater Option
Mechanical Engineering Technology
Mechanical Engineering Technology:
Manufacturing Option

College of Arts and Sciences

- Associate's Degrees**
Information Systems

- Bachelor's Degrees**
Applied Mathematics
Applied Mathematics:
Computer Mathematics Option
Criminal Justice
Criminal Justice: Paralegal Option
Information Systems
Liberal Arts

College of Management

- Associate's Degrees**
Accounting
Banking
Management

Bachelor of Science in Business Administration

- Certificate Programs**
Accounting
Banking
Computer Proficiency
Computer Assisted
Manufacturing
Computer Proficiency
Data/Telecommunications
Electronics Technology
Electro-Optics
Environmental
Technology
Graphic Design and
Digital Imaging
Hazardous Waste
Management
International Trade
Internet Systems
Administration
Land Surveying
Manufacturing
Technology
Multimedia Applications
Nutrition
Packaging
Paralegal
Plastics Engineering
Technology
Purchasing
Management
Quality Assurance
Security Management
Spanish
Technical Writing
UNIX
Water Treatment
Wastewater Treatment
Windows Development
Programming

Certificate Completion
When a student completes the necessary courses for a Certificate program, the student should complete and submit a Certificate Award Petition to the Division of Continuing Education.

Course Grades
Grade reports for the summer sessions will be mailed to students approximately two weeks after exams end. Students who have received their PIN# can also call the Voice Response System at (508) 934-2050 to receive their summer session grades which will be available as soon as they are posted.

Advising Information

In an effort to foster quality advising and to service the information needs of our students, University College/Continuing Education has expanded the University's advising efforts.

Drop-in Advising Center
An Advising Center to service both day and evening students is available to students in Southwick Hall, North Campus. Students are welcome to drop by from 8:30 am-5:00 pm for general advising, information on associate's and bachelor's degrees and certificate programs, and/or to obtain catalogs and brochures. Call the Advising Center at (508) 934-2474.

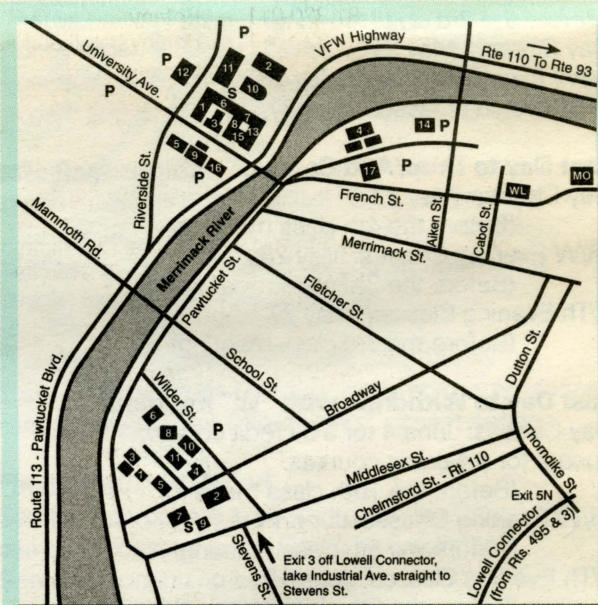
For information on Certificate Programs, call the Certificate Line at (508) 934-2470.

For appointments with Program Coordinators and General Advisors, call (508) 934-2588.
In addition to the advising conducted at the Advising Center, appointments with General Advisors and Program Coordinators are being scheduled in the Office of Enrollment Services. Students are encouraged to call the Office of Enrollment Services/Continuing Education at (508) 934-2588. Evening supervisors are also available from 5:00 pm-8:00 pm to answer questions and conduct status reviews.

- Faculty Advisors**
Professor Alease Bruce: Nutrition and Health
Professor Alan Doerr: Applied Mathematics, Computer Proficiency and General Curriculum
Professor Stephen Driscoll: Plastics and Industrial Technology/Plastics Option, Packaging
Professor Ann Marie Hurley: Computer Mathematics, Information Systems, Multimedia
Professor Paul Kales: Civil Engineering Technology, Water/Wastewater Option
Professor Joseph Lipchitz: Liberal Arts, Criminal Justice, Paralegal Studies
Professor Donald Pottle: Chair - Engineering Technology, Water/Wastewater, Environmental Technology
Professor Charles Thompson: Accounting, Banking, Management
Professor Robert Tuholski: Civil Engineering Technology, Mechanical Engineering Technology, Industrial Technology: Manufacturing Option
Professor Fahd Wakim: Electronic Engineering Technology

- General Advisors**
Ms. Elaine Bourret: Accounting, Banking, Management
Ms. Susan Desmond: Degree and Certificate Programs
Professor Paul Damour: Chemistry, Biology, Environmental Sciences, Physics
Mr. David Driscoll: Multimedia
Ms. Amy Yacus: Graphic Design and Digital Imaging

Campus Information



| North | | South | |
|-------|--------------------------|-----------------|--------------------|
| 1 | BL Ball Engineering Ctr. | 1 | Allen Hall |
| 2 | Costello Gym | 2 | CO Coburn |
| 3 | Cumnock Hall | 3 | Concordia Hall |
| 4 | Dormitories | 4 | Dining Hall |
| 5 | Eames Hall | 5 | DU Dugan Hall |
| 6 | EB Engineering | 6 | DR Durgin Hall |
| 7 | FA Falmouth | 7 | MA Mahoney Hall |
| 8 | KI Kitson | 8 | OL O'Leary Library |
| 9 | Alumni/Lydon Library | 9 | Power Plant |
| 10 | EC Pinanski | 10 | Student Union |
| 11 | OH Olney | 11 | WH Weed Hall |
| 12 | OS Olsen | P | Parking |
| 13 | PA Pasteur | S | Security |
| 14 | Research Foundation | | |
| 15 | SO Southwick Hall | Downtown | |
| 16 | Smith Hall | MO | Mogan Center |
| 17 | Fox Student Union | WL | Wannalancit |
| P | Parking | | |
| S | Security | | |

Parking
Students are encouraged to park in the numerous parking lots on the North and South Campus. Parking stickers may be obtained from the University Police in Ball 125 North Campus (open 24 hours a day, 7 days a week). This sticker entitles students to park after 5:30 pm in any University parking lot except Cumnock Hall. Students should not park in "Residential Parking" areas because Lowell police will tow.

Locating Your Classroom
Upon registration, students are issued a confirmation printout which includes the two-letter building code along with the room number. Refer to the map and building key above to locate where your class will be held. For assistance, call the Advising Center at (508) 934-2474.

Academic Credit Course Listing

REMINDER: THIS COURSE LISTING COMBINES THE UNIVERSITY OF MASSACHUSETTS LOWELL DAY SCHOOL COURSES AND THE CONTINUING EDUCATION COURSES. IT IS IMPORTANT TO CHECK COURSE NUMBERS AND PREREQUISITES TO ENSURE ENROLLMENT IN THE CORRECT CLASS.

College of Management AACSB Accredited Courses

The College of Management at the University of Massachusetts Lowell is accredited by the American Assembly of Collegiate Schools of Business (AACSB) at the graduate and undergraduate level. All courses preceded with + should be acceptable towards any AACSB accredited program and transfer to the College of Management's M.B.A. and under-graduate programs without any restrictions, provided the student has fulfilled all prerequisites prior to taking the course. These courses marked with + are limited to students enrolled in AACSB accredited programs.

Summer Session I
May 19 – June 27, 1997

Day Classes begin on May 19.
M/W Evening Classes begin on May 19 and include 3 FRIDAYS: May 30, June 13, June 27 at the regularly scheduled hours.
T/Th Evening Classes begin on May 20 and include 2 FRIDAYS: June 6, June 20 at the regularly scheduled hours.

| | No. | Title | Time | Days | Cr (Contact) | Prerequisite/Corequisite/Other | Instructor |
|--|--|--|------------------|--------|--------------|---|-----------------------|
| Accounting | 60.201-011* | Accounting/Financial | Noon-2:00 pm | M-Th | 3 | | Samuel Chesler |
| | 60.201-012* | Accounting/Financial | 7:00-10:00 pm | T/Th | 3 | | Harold Sauter |
| | 60.202-011 | Accounting/Managerial | 9:45-11:45 am | M-Th | 3 | P: 60.201 | Samuel Chesler |
| | 67.101-011* | Accounting Principles I | 7:00-10:00 pm | T/Th | 3 | | Charles Thompson |
| | 67.102-011 | Accounting Principles II | 7:00-10:00 pm | T/Th | 3 | P: 67.101 | Claire Bickford |
| | 67.209-011 | Federal Income Taxes | 7:00-10:00 pm | T/Th | 3 | P: 67.102 | Kevin Wall |
| | 60.201 is for students with some accounting/business experience. 67.101 is for students with no accounting experience. *Students may not receive credit for both 60.201 and 67.101. NOTE: The above courses with the 67 prefix are not intended for students matriculating in the Bachelor of Science degree programs in the College of Management. CERTIFICATE IN ACCOUNTING (See page 20 for required courses.) | | | | | | |
| Art/Computer Graphics (see also Computer Mathematics) | 70.291-011 | Intro. to Graphic Design/Mac (Lab Fee)** | 7:00-10:00 pm | M/W | 3 | | Marina Jarvis |
| | 70.297-011* | Studio Workshop/3D Imaging and Animation (Lab Fee) | 9:00 am-12:30 pm | M-Th | 3 | P: 70.265 or 70.262 & 70.264 | James Coates |
| | 70.377-011 | Advanced Animation: After Effects/Mac (Lab Fee)** | 7:00-10:00 pm | T/Th | 3 | P: 70.376 or 90.232 or instr. permission | Chris Florio |
| | *Graphic Design Certificate students may substitute 70.297 for 70.376 Computer Animation: 2D/3D and 70.377 Advanced Animation: After Effects. **While these courses will not directly transfer into the Art Dept.'s B.A./B.F.A. day school degree program, certain two-course clusters may be accepted for transfer upon prior dept. approval. | | | | | | |
| Art History | 58.101-011 | Art Appreciation | Noon-2:00 pm | M-Th | 3 | AE, HSA, Area II | Carol Scollans |
| | 58.101-012 | Art Appreciation | 7:00-10:00 pm | M/W | 3 | AE, HSA, Area II | Charles Giuliano |
| | 58.203-011 | Survey of Art I | 7:30-9:30 am | M-Th | 3 | AE, HSA, Area II | Nancy Eder |
| | 58.204-011 | Survey of Art II | 2:15-4:15 pm | M-Th | 3 | AE, HSA, Area II | Nancy Eder |
| | 58.313-011 | American Art | 9:45-11:45 am | M-Th | 3 | AE, HSA, Area II | Carol Scollans |
| | 58.494-011 | Directed Study in Art History | TBA | TBA | 3 | P: permission of Art History Coordinator | Department Faculty |
| | 58.496-011 | Practicum in Art History | TBA | TBA | 3 | P: permission of Art History Coordinator | Department Faculty |
| Banking | 69.119-011 | Commerical Lending | 7:00-10:00 pm | T/Th | 3 | | Michael Mullin |
| | 69.232-011 | Money and Banking | 7:00-10:00 pm | T/Th | 3 | P: 49.201, 49.202 | Michael Carter |
| Biological Sciences | 35.211-011 | Basic Clinical Micro. & Pathology | 9:45-11:45 am | M-Th | 3 | P: 35.102, 35.104; C: 35.213, SL | Jacob Lam |
| | 35.213-011 | Clinical Micro. & Path. Lab (Lab Fee) | Noon-3:00 pm | M/T/W | 1 (3) | P: 35.102, 35.104; C: 35.211, SL | Jacob Lam |
| | 81.215-011 | Introduction to Marine Biology | 7:30-9:30 am | M-Th | 3 | C: 81.217, SL | Department Faculty |
| | 81.217-011 | Intro. to Marine Biology Lab (Lab Fee) | 9:45-11:45 am | M/W/Th | 1 (3) | C: 81.215, SL | Department Faculty |
| | 81.320-011 | Botany | 7:30-9:30 am | M-Th | 3 | SL, C: 81.322 | Ezequiel Rivera |
| | 81.322-011 | Botany Lab (Lab Fee) | 2:15-5:15 pm | TBA | 1 (3) | SL, C: 81.320 | Ezequiel Rivera |
| | 83.101-011 | Life Science I | Noon-2:00 pm | M-Th | 3 | C: 83.103, Area III, SL | Siu-Lam Lee |
| | 83.101-012 | Life Science I | 7:00-10:00 pm | T/Th | 3 | C: 83.103, Area III, SL | Gail Skinner-Brassard |
| | 83.103-011 | Life Science I Lab (Lab Fee) | 2:15-4:15 pm | T/Th | 1 (2) | C: 83.101, Area III, SL | Siu-Lam Lee |
| Chemical & Nuclear Eng. | 10.347-011 | Elements of Thermodynamics and Heat Transfer | 7:30-9:30 am | M-Th | 3 | P: 92.132, 95.141 | Department Faculty |
| Chemistry | 84.111-011 | General Chemistry I | Noon-2:00 pm | M-Th | 3 | SC | Susan McFarland |
| | 84.113-011 | General Chemistry Lab I (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (3) | C: 84.111, SL | Department Faculty |
| | 84.121-011 | Chemistry I | 9:45-11:45 am | M-Th | 3 | P: Science, Eng'g & Eng. Tech. majors only; others with dept. permission; C: 84.123, SL | Department Faculty |
| | 84.121-012 | Chemistry I | 6:00-9:00 pm | M/W | 3 | P: Science, Eng'g & Eng. Tech. majors only; others with dept. permission; C: 84.123, SL | Peter Gabriel |
| | 84.122-011 | Chemistry II | Noon-2:00 pm | M-Th | 3 | P: 84.121, Science, Eng'g & Eng. Tech. majors only; others with dept. permission; C: 84.124, SL | Department Faculty |
| | 84.122-012 | Chemistry II | 7:00-10:00 pm | T/Th | 3 | P: 84.121, Science, Eng'g & Eng. Tech majors only; others with dept. permission; C: 84.124, SL | Philip Lamprey |
| | 84.123-011 | Chemistry Lab I (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (3) | C: 84.121, SL | Department Faculty |
| | 84.123-012 | Chemistry Lab I (Lab Fee) | 7:00-10:00 pm | T/Th | 1 (3) | C: 84.121, SL | Department Faculty |
| | 84.124-011 | Chemistry Lab II (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (3) | P: 84.123, C: 84.122, SL | Department Faculty |
| | 84.124-012 | Chemistry Lab II (Lab Fee) | 7:00-10:00 pm | M/W | 1 (3) | P: 84.123, C: 84.122, SL | Department Faculty |
| | 84.221-011 | Organic Chemistry I | Noon-2:00 pm | M-Th | 3 | P: 84.122, 84.124; C: 84.227 or 84.229, SL | Department Faculty |
| | 84.221-012 | Organic Chemistry I | 7:00-10:00 pm | T/Th | 3 | P: 84.122, 84.124; C: 84.227 or 84.229, SL | Department Faculty |
| | 84.229-011 | Organic Chemistry Lab I (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (4) | C: 84.221, SL | Department Faculty |
| | 84.229-012 | Organic Chemistry Lab I (Lab Fee) | 6:00-10:00 pm | M/W | 1 (4) | C: 84.221, SL | Department Faculty |
| | 86.131-011 | Environmental Chemistry I | 7:00-10:00 pm | M/W | 3 | | Charles Panagiotakos |
| Cinema | 52.335-011 | Cinema and Italian Americans | 9:45-11:45 am | M-Th | 3 | Area II, HV, AE | Mario Aste |
| | 52.378-011 | Italian Cinema and Culture | Noon-2:00 pm | M-Th | 3 | Area II, HV, AE | Mario Aste |
| Civil Engineering | 14.203-011 | Statics | 7:30-9:30 am | M-Th | 3 | P: 92.132 or 92.126, 95.144, 96.144 | Department Faculty |
| | 14.350-011 | Structural Analysis I | 9:45-11:45 am | M-Th | 3 (4) | P: 14.204 | Department Faculty |
| | 22.211-011 | Mechanics I | 9:45-11:45 am | M-Th | 3 | | Eugene Niemi |
| | 22.213-011 | Dynamics | Noon-2:00 pm | M-Th | 3 | P: 22.211, 92.225 or 92.231 | Department Faculty |
| Civil Engineering Technology | 15.113-011 | CAD (Lab Fee) | 7:00-10:00 pm | T/Th | 2 (3) | P: 23.101 | C. William Lincoln |
| | 15.246-011 | Fluid Mechanics | 7:00-10:00 pm | T/Th | 3 | P: 15.237 or 23.221 | Department Faculty |
| | 15.388-011 | Pumps and Compressors | 7:00-10:00 pm | M/W | 3 | | Paul Doran |
| | CERTIFICATE IN ENVIRONMENTAL TECHNOLOGY (See page 20 for required courses) CERTIFICATE IN LAND SURVEYING (See page 20 for required courses) | | | | | | |
| Civil Engineering Technology Water/Wastewater Option | 15.152-011 | Water Biology | 7:00-10:00 pm | M/W | 3 | | Therese Champigny |
| | 15.274-011 | Waterworks Operations Laboratory I | 7:00-10:00 pm | T/Th | 1 (3) | P: 15.272 | Charles Panagiotakos |
| | 15.340-011 | Hazardous Waste Management | 7:00-10:00 pm | M/W | 3 | | Nihar Mohanty |
| | 86.131-011 | Environmental Chemistry I | 7:00-10:00 pm | M/W | 3 | | Charles Panagiotakos |
| | CERTIFICATE IN WATER TREATMENT (See page 20 for required courses.) CERTIFICATE IN WASTEWATER TREATMENT (See page 20 for required courses.) | | | | | | |

Academic Credit Course Listing

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|---|-------------|---|-------------------------|------|---|--|---------------------|
| Computer Mathematics (see also Computer Science and Art/Computer Graphics) | 42.221-021 | Writing for Interactive Media (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | Requires Flow Charting Software | Timothy Garrand |
| | 70.291-011 | Intro. to Graphic Design/Mac (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Marina Javis |
| | 70.297-011* | Studio Workshop/3D Imaging and Animation (Lab Fee) | 9:00 am-12:30 pm | M-Th | 3 | P: 70.265 or 70.262 & 70.264 | James Coates |
| | 70.377-011 | Advanced Animation: After Effects/Mac (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 70.376 or 90.232 or instr. permission | Chris Florio |
| | 90.230-011 | Intro. to Multimedia/Mac (Lab Fee) | 7:30-9:30 am | M-Th | 3 | | Hannelore Wideman |
| | 90.230-012 | Intro. to Multimedia/Mac (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Darryl Benjamin |
| | 90.230-013 | Intro. to Multimedia/Windows (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Chris Perry |
| | 90.231-021 | Graphics for Multimedia/Mac (Lab Fee)(14 wks) | 7:00-10:00 pm | W | 3 | P: 90.230 | Hannelore Wideman |
| | 90.232-011 | Desktop Video Productions/Windows (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.230 | Beatrice Lee |
| | 90.233-011 | Multimedia Authoring Software Using Macromedia's Director/Mac (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 90.230 | Beatrice Lee |
| | 90.234-021 | Designing and Developing Interactive Media/Mac (Lab Fee) (14 weeks) | 7:00-10:00 pm | M | 3 | P: 90.231, 92.232 | Robert Graham |
| | 90.238-011 | Designing Multimedia for the World Wide Web/Mac (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.231 | Helen Weatherall |
| | 90.239-021 | Multimedia Scripting with Directors' Lingo (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | Requires Macromedia Director 5.0 | Jonathan Adams |
| | 90.301-011 | Java Programming (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267 | Lou Colon |
| | 90.301-022 | Java Programming (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | P: 92.267, Reqs. Sun Java Develop Kit | Mark Cohen |
| | 90.436-011 | Software Project Management (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | George Marootian |
| | 90.477-011 | Novell Lan Administration (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Jeff Garuin |
| | 90.479-011 | Novell Enterprise Administration (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Anthony Forgetta |
| | 92.202-011 | Introduction to Personal Computers and Applications Software (Lab Fee) | 6:00-9:00 pm | M/W | 3 | | Department Faculty |
| | 92.202-012 | Introduction to Personal Computers and Applications Software (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 92.202-013 | Introduction to Personal Computers and Applications Software (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | | Department Faculty |
| | 92.202-014 | Introduction to Personal Computers and Applications Software (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Susan L'Italien |
| | 92.211-011* | Intro. to Programming with C (Lab Fee) | 9:45-11:45 am | M-Th | 3 | P: 92.121 or equivalent | Ann Marie Hurley |
| | 92.211-012* | Intro. to Programming with C (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.121 or equivalent | Department Faculty |
| | 92.211-013* | Intro. to Programming with C (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.121 or equivalent | Department Faculty |
| | 92.212-011 | Intro. to Programming with C II (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.211 | Sean McGowan |
| | 92.220-011 | Visual Basic (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Randhir Chhatwal |
| | 92.220-012 | Visual Basic (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Arthur Chadbourne |
| | 92.220-023 | Visual Basic (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | Requires Visual Basic 4.0 | Randhir Chhatwal |
| | 92.267-011* | C Programming (Lab Fee) | Noon-2:00 pm | M-Th | 3 | P: previous programming exp. | Ann Marie Hurley |
| | 92.267-012* | C Programming (Lab Fee) | 6:00-9:00 pm | M/W | 3 | P: previous programming exp. | Department Faculty |
| | 92.267-013* | C Programming (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: previous programming exp. | Department Faculty |
| | 92.267-014* | C Programming (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | P: previous programming exp. | Victor Gagnon |
| | 92.267-015* | C Programming (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: previous programming exp. | Timothy Niesen |
| | 92.267-026* | C Programming (14 weeks)(Lab Fee) | CyberEd/Internet course | | 3 | P: previous programming exp. Requires C Compiler Software | Timothy Niesen |
| | 92.268-011 | C++ Programming (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267 | Raghavan Srinivasam |
| | 92.268-022 | C++ Programming (Lab Fee) (14 weeks) | 7:00-10:00 pm | T | 3 | P: 92.267 | Mark Hertel |
| | 92.268-023 | C++ Programming (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | P: 92.267 Requires C Compiler Software | Mark Hertel |
| | 92.270-011 | Visual C++ (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.268 | Department Faculty |
| | 92.270-012 | Visual C++ (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.268 | Department Faculty |
| | 92.311-011 | Intro. to the UNIX Op. Sys. (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267 or 92.212 | Andrew Garside |
| | 92.311-012 | Intro. to the UNIX Op. Sys. (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.267 or 92.212 | Department Faculty |
| | 92.311-023 | Intro. to UNIX (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | | Frederick Vegliante |
| | 92.312-011 | UNIX Shell Programming (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.311 | William Vales |
| | 92.312-021 | UNIX Shell Prog. (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | P: 92.311 | Michael Richards |
| | 92.313-011 | UNIX Internals Overview (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.312 | Elaine O'Malley |
| | 92.360-011 | Intro. to Data Structures/C (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.267, 92.212 and 92.364, 92.321 | Victor Alvarado |
| | 92.360-021 | Intro. to Data Structures/C (14 weeks)(Lab Fee) | CyberEd/Internet course | | 3 | P: 92.267, 92.212 and 92.364, 92.321 | Department Faculty |
| | 92.364-011 | Problem Solving with C (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.212 or 92.267 | Sean McGowan |
| | 92.419-021 | Computer Alg. with MATHEMATICA (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | | Kenneth Levasseur |
| | 92.460-011 | ATM Networking | 7:00-10:00 pm | M/W | 3 | | Raymond Vigeant |
| | 92.470-011 | Data Telecommunications (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267, 92.311 | Louis Vella |
| | 92.472-011 | Local Area Networks (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.470 | Richard Sweeney |
| | 92.473-011 | Computer Network Architecture and Protocol | 7:00-10:00 pm | T/Th | 3 | P: 92.472 | Alan Wu |
| *Students may not receive credit for both 92.211 and 92.267 | | | | | | | |
| CERTIFICATE IN COMPUTER PROFICIENCY (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN DATA TELECOMMUNICATIONS (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN UNIX (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN MULTIMEDIA APPLICATIONS (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN INTERNET SYSTEM ADMINISTRATION (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN WINDOWS DEVELOPMENT PROGRAMMING (See page 20 for required courses.) | | | | | | | |
| CERTIFICATE IN COMPUTER SCIENCE (See page 20 for required courses.) | | | | | | | |

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|---|---|--|-------------------------|------|-------|-----------------------------------|--------------------|
| Computer Science (see also Computer Mathematics Option) | 91.100-021 | Computing I Lab (Lab Fee) (14 weeks) | 6:00-8:00 pm | W | 1 (2) | C: 91.101 | Department Faculty |
| | 91.101-021 | Computing I Lecture (14 weeks) | 6:00-9:00 pm | M | 3 | C: 91.101, SC | Department Faculty |
| | 91.102-021 | Computing II (Lab Fee) (14 weeks) | 6:00-9:00 pm | T | 4 | P: 91.101 or Chair permission, SC | Department Faculty |
| | 91.113-011 | Exploring the Internet (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | M. Trutschel |
| | 91.113-012 | Exploring the Internet (Lab Fee) | 9:45-11:45 am | M-Th | 3 | | R. Erbacher |
| | 91.250-021 | Data Structures, Algorithms & C (Lab Fee) (14 weeks) | 6:00-9:00 pm | SAT | 3 | P: some programming exp. required | Paula Butler |
| | 91.281-011 | Intro. to Windows Programming with Object Oriented Programming Tools (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.270 | Douglas Norman |
| | 91.301-021 | Organization of Programming Languages (14 weeks) | 6:00-9:00 pm | M | 3 | P: 91.250 | R. Boccuzzi |
| | 91.305-021 | Computer Architecture (Lab Fee) (14 weeks) | 6:00-9:00 pm | T | 3 | P: 91.250 | David Hendrickson |
| | 91.308-021 | Operating Systems (Lab Fee) (14 weeks) | 6:00-9:00 pm | W | 3 | P: 91.250 | A. Rafiemyhr |
| | 91.353-011 | Windows Programming for the Design of Interactive Systems (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.268 | Department Faculty |
| | 91.371-011 | Internet System Administration (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.311 | William Fernandez |
| | 91.373-011 | HTML Development (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | David Sciuto |
| | 91.373-022 | HTML Development (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | | Department Faculty |
| | 91.404-021 | Analysis of Algorithms (Lab Fee) (14 weeks) | 6:00-9:00 pm | Th | 3 | P: 91.250, 92.322 | Department Faculty |
| | 91.472-011 | Security Issues on the Internet (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: permission of instructor | Paul Chiasson |
| | CERTIFICATE IN COMPUTER SCIENCE (See page 20 for required courses.) | | | | | | |

Academic Credit Course Listing

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|--|---|--|-------------------------|--------|-------|---|-----------------------|
| Criminal Justice (see also Paralegal Studies) | 44.101-011 | Introduction to Criminal Justice | Noon-2:00 pm | M-Th | 3 | | Department Faculty |
| | 44.111-011 | Industrial Security | 7:00-10:00 pm | M/W | 3 | | John Pignato |
| | 44.141-011 | Police Functions | 9:45-11:45 am | M-Th | 3 | | Douglas Morrow |
| | 44.201-011 | Computer Applications in CJ (Lab Fee) | 9:45-11:45 am | M-Th | 3 | P: 44.101 or instructor permission | Joseph Lipchitz |
| | 44.221-011 | Criminology I | 7:00-10:00 pm | T/Th | 3 | | Susan Siopes |
| | 44.234-011 | Criminal Law | 7:00-10:00 pm | M/W | 3 | | Anthony Petrosino |
| | 44.261-011 | Juvenile Delinquency | 7:00-10:00 pm | T/Th | 3 | | Steven Sacco |
| | 44.380-011 | Selected Issues: Stress Management for Law Enforcement Personnel | 7:00-10:00 pm | T/Th | 3 | | Gerald Tully |
| | 44.390-011 | Introduction to Criminal Justice Research | Noon-2:00 pm | M-Th | 3 | | Carolyn Petrosino |
| | 44.435-011 | Alternative Dispute Resolution | 7:00-10:00 pm | M/W | 3 | | Ann O'Connor Downes |
| | 44.490-011 | Criminal Justice Research Seminar | 2:15-4:15 pm | M-Th | 3 | P: 44.390 | E. Buzawa/G. Hotaling |
| | 44.493-011 | Computer Crime | 7:30-9:30 am | M-Th | 3 | | Joseph Lipchitz |
| | 44.496-011 | Criminal Justice Practicum | 2:15-4:15 pm | M-Th | 3 | P: Jrs. and Srs. in Criminal Justice only | Gerald Hotaling |
| | CERTIFICATE IN SECURITY MANAGEMENT (See page 20 for required courses.) | | | | | | |
| | CERTIFICATE IN PARALEGAL STUDIES (See page 20 for required courses.) | | | | | | |
| Economics | 49.201-011 | Economics I (Microeconomics) | 9:45-11:45 am | M-Th | 3 | Area I, BS | Carol McDonough |
| | 49.201-012 | Economics I (Microeconomics) | 7:00-10:00 pm | M/W | 3 | Area I, BS | Michael Carter |
| | 49.201-013 | Economics I (Microeconomics) | 7:00-10:00 pm | T/Th | 3 | Area I, BS | George Dery |
| | 49.202-011 | Economics II (Macroeconomics) | 7:00-10:00 pm | T/Th | 3 | Area I, BS | Ernesto Sanz |
| | 49.211-011 | Statistics I | 9:45-11:45 am | M-Th | 3 | P: 92.122 or equivalent | Supriya Lahiri |
| | 49.315-011 | Intro. to Environmental Economics | 9:45-11:45 am | M-Th | 3 | | Paul Snoonian |
| Electrical Engineering | CERTIFICATE IN INTERNATIONAL TRADE (See page 20 for required courses.) | | | | | | |
| | 16.201-021 | Circuit Theory I (June 11-July 17) | 7:00-9:00 pm | M-Th | 3 | P: 92.132, C: 16.207 | Stephen Spurk |
| | 16.364-011 | Engineering Mathematics | TBA | TBA | 3 | P: 92.234 and 16.201 | Department Faculty |
| | 16.409-011 | Project Lab (Lab Fee) | TBA | TBA | 3 | P: Instructor permission | Ziyad Salameh |
| | 16.410,411,412 | Directed Studies | TBA | TBA | 3 | P: Instructor permission | Department Faculty |
| Electronic Engineering Technology | 16.442-011 | Engineering Applications of Java Programming (Lab Fee) | 9:45-11:45 am | M-Th | 3 | P: 16.211, Senior status | Russell Laste |
| | 17.130-011 | Electrical Basics and Laboratory | 7:00-10:00 pm | TBA | 2 (3) | P: 42.226, 92.115, 92.219 or 92.263, 99.132 | Thomas Coffey |
| | 17.213-011 | Electric Circuits | 7:00-10:00 pm | M/W | 3 | P: 92.125 (may be taken concurrently) and either 92.219 or 92.267 | James Davis |
| | 17.492-011 | Diagnostic Programming | 7:00-10:00 pm | M/W | 3 | P: 17.383 and either 92.265 or 92.267 | Philip Arrigo |
| English | CERTIFICATE IN ELECTRO-OPTICS (See page 20 for required courses.) | | | | | | |
| | 42.101-011 | College Writing I | 7:30-9:30 am | M-Th | 3 | | Department Faculty |
| | 42.101-012 | College Writing I | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 42.102-011 | College Writing II | 9:45-11:45 am | M-Th | 3 | P: 42.101 | Department Faculty |
| | 42.102-012 | College Writing II | 7:00-10:00 pm | T/Th | 3 | P: 42.101 | Department Faculty |
| | 42.103-011 | College Writing I for International Students | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 42.205-011 | Human Values — Western Culture | 7:00-10:00 pm | T/Th | 3 | P: LTV, Area I | Joseph Zaitchik |
| | 42.212-011 | The Short Story | 7:00-10:00 pm | T/Th | 3 | P: 42.102, Area II, LT | Department Faculty |
| | 42.217-011 | Horror Story | 12:00-2:00 pm | M-Th | 3 | P: 42.102, Area II, LT | Robert Kachur |
| | 42.221-021 | Writing for Interactive Media (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | Requires Flow Charting Software | Timothy Garrand |
| | 42.224-011* | Business Writing | 7:00-10:00 pm | M/W | 3 | P: 42.102 | Rosalie Ryan |
| | 42.224-021 | Business Writing (Lab Fee) (14 weeks) | CyberEd/Internet course | | 3 | | Nancy Brown |
| | 42.226-011* | Technical & Scientific Communication | 6:30-9:30 pm | T/Th | 3 | P: 42.102 | Dirk Messelaar |
| | 42.232-011 | Turning Fiction into Film: Jane Austen and EM Forster Go to the Movies | 7:00-10:00 pm | M/W | 3 | LT, P42.102 | Robert Kachur |
| | 42.267-011 | Introduction to Shakespeare | 9:45-11:45 am | M-Th | 3 | Area II, LT, P42.102 | William Hersey |
| | 42.292-011 | History of English Literature II | 7:30-9:30 am | M-Th | 3 | Area II, LT, P42.102 | William Hersey |
| | 42.294-011 | History of American Literature I | 7:00-10:00 pm | M/W | 3 | P: 42.102, Area II, LT | Robert Griffin |
| | 42.302-011 | Creative Writing: Fiction | 7:00-10:00 pm | T/Th | 3 | P: 42.102 | Richard Farrell |
| | 42.303-011 | Creative Writing: Poetry | 7:00-10:00 pm | M/W | 3 | P: 42.102 | J. Dickerman-Nelson |
| | 42.403-021 | Advanced Software Writing (14 weeks) | 7:00-10:00 pm | T | 3 | | John Garison |
| | 42.404-011 | Freelance Writing | 6:00-9:00 pm | M/W | 3 | | Jay Atkinson |
| | *Please note that students may not receive credit for both 42.224 and 42.226. | | | | | | |
| Environmental Sciences | 87.115-011 | Astronomy | 7:00-10:00 pm | T/Th | 3 | Area III, SC | Arnold O'Brien |
| | 87.403-011 | GIS in Environmental Studies (Lab Fee) | 6:30-9:30 pm | M/W | 3 | | William Hamilton |
| | 89.101-011 | General Geology I | 7:30-9:30 am | M-Th | 3 | Area III, SC | Arnold O'Brien |
| | (See offerings under Civil Engineering Technology, Chemistry, Environmental Sciences, and Water/Wastewater Option.) | | | | | | |
| Finance | CERTIFICATE IN ENVIRONMENTAL TECHNOLOGY (See page 20 for required courses.) | | | | | | |
| | 61.301-011 | Business Finance | 6:00-9:00 pm | T/Th | 3 | P: 60.202, 49.201, 49.202, 60 credits | Michael Rouse |
| Health Professions | 30.201-011 | Community Health | 6:00-9:00 pm | T/Th | 3 | | Department Faculty |
| | 30.306-011 | Introduction to Gerontology | 12:30-2:30 pm | M-Th | 3 | BS | Judith Conahan |
| | 30.307-011 | Life Style and Health Behavior | 7:30-9:30 am | M-Th | 3 | | Nicole Champagne |
| | 30.315-011 | Kinesiology and Lab (Lab Fee) | 9:45-11:45 am | M-F | 4 | P: All freshmen, soph. E.P. courses and 1 yr. of A. and P. and 1 yr. of Physics | Joseph Dorsey |
| | 35.101-011 | Human Anatomy and Physiology I | 9:45-11:45 am | M-Th | 3 | C: 35.103, SL | Effegenia Sintros |
| | 35.103-011 | Human Anatomy & Phys. I Lab (Lab Fee) | 1:00-4:00 pm | T/W/Th | 1 (3) | C: 35.101, SL | Effegenia Sintros |
| | 35.206-011 | Human Nutrition | 9:45-11:45 am | M-Th | 3 | | Department Faculty |
| | 35.211-011 | Basic Clinical Microbiology and Path. | 9:45-11:45 am | M-Th | 3 | P: 35.102, 35.104; C: 35.213, SL | Jacob Lam |
| | 35.213-011 | Clinical Micro. & Path. Lab (Lab Fee) | 12:00-3:00 pm | M/T/W | 1 (3) | P: 35.102, 35.104; C: 35.211, SL | Jacob Lam |
| | 35.356-011 | Pharmacology | 7:30-9:30 am | M-Th | 3 | P: Junior level | Arthur Vergados |
| | 36.350-011 | Human Biochemistry | 9:45-11:45 am | M-Th | 3 | P: 35.252 or equivalent | John Dolan |
| History (see also Art History) | 43.111-011 | U.S. History to 1877 | 9:45-11:45 am | M-Th | 3 | Area II, HS | Dean Bergeron |
| | 43.272-011 | The American Indian | 9:45-11:45 am | M-Th | 3 | Area II, HS | George Luter |
| | 43.364-011 | War and Cold War: U.S. History in the 1940's and 1950's | 7:00-10:00 pm | M/W | 3 | Area II, HS | Mark Kosinski |
| | 43.384-011 | Radicalism in American History | 7:00-10:00 pm | M/W | 3 | Area II, HS | William Jordan |
| | 46.368-011 | Middle East in the Modern World | Noon-2:00 pm | M-Th | 3 | Area II, HS | Dean Bergeron |
| | Industrial Technology (See separate listings under Manufacturing, Plastics, and Civil Engineering Technology: Water/Wastewater Option.) | | | | | | |
| Intercollegiate Arts and Science | 59.101-011 | Values & Creative Thinking | 9:45-11:45 am | M-Th | 3 | | Department Faculty |
| | 59.101-012 | Values & Creative Thinking | 6:00-9:00 pm | M/W | 3 | | Department Faculty |
| | 59.205-011 | Human Values — Western Culture | 7:00-10:00 pm | T/Th | 3 | LTV, Area I | Joseph Zaitchik |
| | 59.240-011 | Intro. to Women's Studies | 7:30-9:30 am | M-Th | 3 | | Susan Gallagher |
| Languages | 50.211-011 | Intermediate Conversational French I | 7:00-10:00 pm | M/W | 3 | Area II | Department Faculty |
| | 51.211-011 | Intermediate German I | 7:00-10:00 pm | T/Th | 3 | P: 51.102, Area II | Robert Whelan |
| | 51.491-011 | Twentieth Century German Literature | 6:00-9:00 pm | T/Th | 3 | | Robert Whelan |
| | 52.335-011 | Cinema and Italian Americans | 9:45-11:45 am | M-Th | 3 | Area II, HV, AE | Mario Aste |
| | 52.378-011 | Italian Cinema and Culture | Noon-2:00 pm | M-Th | 3 | Area II, HV, AE | Mario Aste |
| | 53.101-011 | Beginning Japanese I | 7:00-10:00 pm | T/Th | 3 | | Department Faculty |
| | 53.103-011 | Beginning Russian I | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 54.101-011 | Beginning Spanish I | 7:30-9:30 am | M-Th | 3 | | Heli Hernandez |
| | 54.101-012 | Beginning Spanish I | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 54.211-011 | Intermediate Conversational Spanish I | 9:45-11:45 am | M-Th | 3 | P: 54.102 or equivalent, Area II | Heli Hernandez |
| | 54.211-012 | Intermediate Conversational Spanish I | 7:00-10:00 pm | T/Th | 3 | P: 54.102 or equivalent, Area II | Department Faculty |
| | 54.254-011 | Topics in Conversational Spanish | 6:00-9:00 pm | T/Th | 3 | | Department Faculty |
| | CERTIFICATE IN SPANISH (See page 20 for required courses.) | | | | | | |
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Academic Credit Course Listing

| | | | | | | | | |
|--|--|--|-------------------------|---------------|-------|--|--|---------------------------|
| Legal Studies (see also Paralegal Studies) | 41.363-011 | Corporate & Property Law | 7:00-10:00 pm | T/Th | 3 | BS, Collateral to Criminal Justice | Eugene Reardon | |
| | 41.262-011 | Introduction to Business Law | 7:00-10:00 pm | T/Th | 3 | | Eugene Reardon | |
| | 41.367-011 | Environmental Law | 9:45-11:45 am | M-Th | 3 | | William Burke | |
| | 41.367-012 | Environmental Law | 7:00-10:00 pm | M/W | 3 | | William Burke | |
| | 41.370-011 | Real Estate Law | 7:00-10:00 pm | M/W | 3 | | J. Alan Roberts | |
| | 41.376-011 | Family Law | 7:30-9:30 am | M-Th | 3 | | Russell Karl | |
| | 41.376-012 | Family Law | 7:00-10:00 pm | M/W | 3 | | Russell Karl | |
| | 41.381-011 | Women and the Law | 7:00-10:00 pm | T/Th | 3 | | Nancy Dick | |
| | 41.387-011 | Legal Research Methods (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Debra Thompson | |
| | 41.390-011 | Litigation | 7:00-10:00 pm | T/Th | 3 | | Michael Martell | |
| | 41.392-011 | Wills and Trusts | 7:00-10:00 pm | T/Th | 3 | | Debra Thompson | |
| | 41.395-011 | Bankruptcy Law | 7:00-10:00 pm | M/W | 3 | | Peter Stocks | |
| | 41.363-011 | Corporate & Property Law | 7:00-10:00 pm | T/Th | 3 | | Eugene Reardon | |
| | Management | 62.201-011 | Marketing Principles | 7:00-10:00 pm | T/Th | | 3 | P: 47.101, 48.101, 49.202 |
| 63.210-011 | | Operations Analysis | 7:30-11:45 am | M/W | 3 | P: 49.211 | M. Riaz Khan | |
| 63.371-011 | | Operations Management I | 7:30-9:30 am | M-Th | 3 | | George Liaw | |
| +66.301-011 | | Organizational Behavior | 9:45-12:45 pm | M/W | 3 | P: 60 credits | Stuart Freedman | |
| +66.490-011 | | Strategic Management | 9:45-12:45 pm | M/W | 3 | P: 61.301, 62.201, 63.371, 66.301, and 96 credits | Louis Zivic | |
| 69.231-011 | | Business Finance | 7:00-10:00 pm | M/W | 3 | P: 67.102, 49.201, 49.202 | Franklin Inman, Jr. | |
| 69.232-011 | | Money and Banking | 7:00-10:00 pm | T/Th | 3 | P: 49.201, 49.202 | Michael Carter | |
| 69.253-011 | | Intro. to Management & Org. Behavior | 7:00-10:00 pm | M/W | 3 | | P. G. Zicari | |
| 69.271-011 | | Operations Management | 7:00-10:00 pm | T/Th | 3 | P: 49.211 | George Liaw | |
| 69.276-011 | | Entrepreneurial Management | 7:00-10:00 pm | M/W | 3 | | Mel Epstein | |
| 69.277-011 | | Leadership in Management | 7:00-10:00 pm | T/Th | 3 | | Sharron Lovins | |
| NOTE: The above courses with 69 prefixes are not intended for matriculating University of Massachusetts Lowell day students and will not transfer into the College of Management day programs. | | | | | | | | |
| CERTIFICATE IN PURCHASING MANAGEMENT (See page 20 for required courses.) | | | | | | | | |
| Mathematics (see also Computer Mathematics) | | 90.111-011* | Fundamental of Algebra | 7:00-10:00 pm | T/Th | 3 | Liberal Arts majors only, Area III Liberal Arts majors only, Area III, MA P: 92.121, MA Area III, MA P: 90.111 or placement exam,*** Area III, MA P: 92.121, Area III, MA P: 92.121, Area III, MA P: 92.125, MA MA P: 92.127, MA MA P: 92.131, MA P: 92.131, MA P: 90.111 or equivalent, Area III, MA P: 90.111 or equivalent, Area III, MA SC SC SC P: 92.126, MA P: 92.225, MA P: 92.132, MA P: 92.132 or 92.225, MA P: 92.132 or 92.225, MA P: 92.265 P: 92.265 P: 92.265, P: 92.265, P: 90.112 or 92.121 P: 92.321 and 92.231, 92.234 P: 92.183 or equivalent P: 92.126 or 92.132 P: 92.231 or 92.226 P: 92.386/Linear Algebra, or equiv. P: Calculus II or equivalent P: 92.221 or 92.321 P: Senior standing P: Calculus and Discrete Structures | Anthony Sokolowski |
| | 92.110-011 | College Algebra | Noon-2:00 pm | M-Th | 3 | Alan Kaplan | | |
| | 92.111-011 | Mathematical Perspectives | 9:45-11:45 am | M-Th | 3 | Stanley Spiegel | | |
| | 92.115-011 | College Trigonometry | 7:00-10:00 pm | T/Th | 3 | Candice Weston | | |
| | 92.121-011** | Precalculus Mathematics | 9:45-11:45 am | M-Th | 3 | Ronald Brent | | |
| | 92.121-012** | Precalculus Mathematics | 7:00-10:00 pm | T/Th | 3 | Department Faculty | | |
| | 92.122-011 | Differential Calculus | 7:30-9:30 am | M-Th | 3 | Department Faculty | | |
| | 92.125-011 | Calculus A | 7:00-10:00 pm | T/Th | 3 | Department Faculty | | |
| | 92.126-011 | Calculus B | 7:00-10:00 pm | T/Th | 3 | Theresa Schille | | |
| | 92.127-011 | Calculus IA | 9:45-11:45 am | M-F | 4 | Department Faculty | | |
| | 92.128-011 | Calculus IB | 9:45-11:45 am | M-F | 4 | Department Faculty | | |
| | 92.131-011 | Calculus I | 9:45-11:45 am | M-F | 4 | Department Faculty | | |
| | 92.131-012 | Calculus I | 7:30-9:30 am | M-F | 4 | Alan Kaplan | | |
| | 92.132-011 | Calculus II | 7:30-9:30 am | M-F | 4 | Marvin Stick | | |
| | 92.132-012 | Calculus II | 9:45-11:45 am | M-F | 4 | Marvin Stick | | |
| | 92.183-011 | Introduction to Statistics | 7:30-9:30 am | M-Th | 3 | Alexander Olsen | | |
| | 92.183-012 | Introduction to Statistics | 7:00-10:00 pm | T/Th | 3 | Erica Schissler | | |
| | 92.202-011 | Introduction to Personal Computers and Applications Software (Lab Fee) | 6:00-9:00 pm | M/W | 3 | Department Faculty | | |
| | 92.202-012 | Intro. to PC's & Appl. Soft. (Lab Fee) | 7:00-10:00 pm | M/W | 3 | Department Faculty | | |
| | 92.202-013 | Intro. to PC's & Appl. Soft. (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | Department Faculty | | |
| | 92.202-014 | Intro. to PC's & Appl. Soft. (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | Susan L'Italien | | |
| | 92.225-011 | Calculus C | 7:00-10:00 pm | T/Th | 3 | Philip Breen | | |
| | 92.226-011 | Calculus D | 7:00-10:00 pm | T/Th | 3 | Ashot Shahinian | | |
| | 92.231-011 | Calculus III | 9:45-11:45 am | M-F | 4 | Department Faculty | | |
| | 92.234-011 | Differential Equations | 9:45-11:45 am | M-Th | 3 | Raj Prasad | | |
| | 92.234-012 | Differential Equations | 7:00-10:00 pm | T/Th | 3 | Raj Prasad | | |
| | 92.267-011 | C Programming (Lab Fee)** | Noon-2:00 pm | M-Th | 3 | Ann Marie Hurley | | |
| | 92.267-012 | C Programming (Lab Fee)** | 6:00-9:00 pm | M/W | 3 | Department Faculty | | |
| | 92.267-013 | C Programming (Lab Fee)** | 7:00-10:00 pm | M/W | 3 | Department Faculty | | |
| | 92.267-014 | C Programming (Lab Fee)** | 6:00-9:00 pm | T/Th | 3 | Victor Gagnon | | |
| | 92.267-015 | C Programming (Lab Fee)** | 7:00-10:00 pm | T/Th | 3 | Timothy Niesen | | |
| | 92.321-011 | Discrete Structures I | 3:30-6:30 pm | T/Th | 3 | Alan Doerr | | |
| | 92.322-011 | Discrete Structures II | Noon-2:00 pm | M-Th | 3 | Alan Doerr | | |
| | 92.363-011 | Intro. to Data Analysis (SPSSX) (Lab Fee) | 9:45-11:45 am | M-Th | 3 | Alexander Olsen | | |
| | 92.386-011 | Statistics for Engineering and Science | 9:45-11:45 am | M-Th | 3 | Lee Jones | | |
| | 92.411-011 | Complex Variables I | 9:45-11:45 am | M-Th | 3 | Department Faculty | | |
| | 92.416-011 | Pattern Recognition and Neural Networks | 5:30-8:30 pm | M/W | 3 | Lee Jones | | |
| | 92.419-021 | Computer Alg. with Mathematica (Lab Fee) (14 Weeks) | CyberEd/Internet Course | | 3 | Kenneth Levasseur | | |
| | 92.420-011 | Mathematical Problem Solving (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | Kenneth Levasseur | | |
| | 92.421-011 | Abstract Algebra I | Noon-2:00 pm | M-Th | 3 | Department Faculty | | |
| | 92.450-011 | Mathematical Modeling | 5:30-8:30 pm | T/Th | 3 | James Graham-Eagle | | |
| | 92.480-011 | Applied Combinatorics | 5:30-8:30 pm | M/W | 3 | Mark Yin | | |
| | *Fundamentals of Algebra (90.111) is a preparatory course and cannot be credited toward a degree program at the University of Massachusetts Lowell. | | | | | | | |
| | **Students may not receive credit for both 90.112 and 92.121. Students may not receive credit for both 92.211 and 92.267. | | | | | | | |
| | ***Placement exam is given the first evening of class. | | | | | | | |
| | Many 500-level courses are well within the grasp of upper level undergraduates and may be used as electives. Refer to the Graduate School listing and contact the Graduate School for admissions procedures. University of Massachusetts Lowell Day students must have approval from the mathematics coordinator before taking courses with a 90 prefix. | | | | | | | |
| Mechanical Engineering | 22.211-011 | Mechanics I | 9:45-11:45 am | M-Th | 3 | P: 22.211, 92.225 or 92.231 P: 84.122, 95.144, 25.101, 25.102 | Eugene Niemi | |
| | 22.213-011 | Dynamics | Noon-2:00 pm | M-Th | 3 | | Department Faculty | |
| | 22.295-011 | Material Science and Engineering | 7:30-9:30 am | M-Th | 3 | | Turgay Erturk | |
| Mechanical Engineering Technology & Manufacturing Option | 23.101-011 | Engineering Graphics I | 7:00-10:00 pm | T/Th | 2 (3) | P: 23.102 P: 92.125, 92.263, 99.131 P: 92.126, 92.263, 99.132 | Bradley Mingles | |
| | 23.200-011 | CADrf* (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Norman Truscott | |
| | 23.221-011 | Statics | 7:00-10:00 pm | M/W | 3 | | Marilynn Keppler | |
| | 23.241-011 | Elements of Thermodynamics I | 7:00-10:00 pm | T/Th | 3 | | Vernon Oliver | |
| | 23.418-011 | Quality Work Teams | 7:00-10:00 pm | M/W | 3 | | C. Marchand-Fournier | |
| *Some additional projects are required for this course. CERTIFICATE IN MANUFACTURING TECHNOLOGY (See page 20 for required courses.) | | | | | | | | |
| Multimedia Applications | (See Computer Mathematics and Computer Science) | | | | | | | |
| Music | 71.100-011 | Fundamentals of Musicianship | 7:00-10:00 pm | M/W | 3 | Music majors only P: 71.101 P: 71.103 Non-Music majors, Area II, AE P: 71.102 P: 71.104 | Jacqueline Charette | |
| | 71.102-011 | Music Theory II | 7:30-9:30 am | M-Th | 3 | | Lisa Cleveland | |
| | 71.104-011 | Solfege II | 9:45-11:45 am | M-Th | 3 | | Mark Peterson | |
| | 71.110-011 | Basic Music Theory | 7:00-10:00 pm | M/W | 3 | | Juanita Tsu | |
| | 71.201-011 | Music Theory III | 7:30-9:30 am | M-Th | 3 | | Mark Peterson | |
| | 71.203-011 | Solfege III | 9:45-11:45 am | M-Th | 3 | | Lisa Cleveland | |
| | 74.261-011 | Survey of Music History I | 7:30-9:30 am | M-Th | 3 | | John Ogasapian | |
| | 74.262-011 | Survey of Music History II | 9:45-11:45 am | M-Th | 3 | | John Ogasapian | |
| | 74.386-011 | Rock and Roll (May 19 - May 30) | Noon-4:00 pm | M-F | 3 | | Scott Fredrickson | |
| | For Summer Music Education Program see page 14. | | | | | | | |

Academic Credit Course Listing

| | | | | | | | |
|---|--|---|---------------|-------|-------------------------|---|--|
| Paralegal (see also Legal Studies & Criminal Justice) | 41.103-011 | Introduction to Paralegal Studies | 7:00-10:00 pm | T/Th | 3 | BS | Donna Zils Banfield |
| | 41.370-011 | Real Estate Law | 7:00-10:00 pm | M/W | 3 | | J. Alan Roberts |
| | 41.376-011 | Family Law | 7:30-9:30 am | M-Th | 3 | | Russell Karl |
| | 41.376-012 | Family Law | 7:00-10:00 pm | M/W | 3 | | Russell Karl |
| | 41.387-011 | Legal Research Methods (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Debra Thompson |
| | 41.390-011 | Litigation | 7:00-10:00 pm | T/Th | 3 | | Michael Martell |
| | 44.301-011 | Comp. Appl. for the Legal Prof. (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Dale Fulton |
| | 44.497-011 | Paralegal Practicum | TBA | TBA | 3 | | P: minimum of 3 paralegal courses and instructor permission; call 508-649-9880 |
| (Please see admission requirements to the Paralegal Certificate on page 20.) | | | | | | | |
| Courses are open only to students currently enrolled in the Paralegal Certificate.Courses are available to other students on a space available basis. | | | | | | | |
| Philosophy | 45.201-011 | Introduction to Philosophy | 7:00-10:00 pm | M/W | 3 | Area II and VC, HV | Deborah Matteson |
| | 45.201-012 | Introduction to Philosophy | 6:00-9:00 pm | T/Th | 3 | Area II and VC, HV | Michael Koran |
| | 45.202-011 | Introduction to Logic | 9:45-11:45 am | M-Th | 3 | Area II and VC, HV | Peter Skagestad |
| | 45.203-011 | Introduction to Ethics | 7:00-10:00 pm | M/W | 3 | Area II and VC, HV | Tracey Stark |
| | 45.203-012 | Introduction to Ethics | 9:45-11:45 am | M-Th | 3 | Area II and VC, HV | Elizabeth Gleason |
| | 45.314-011 | Science Fiction and Philosophy | 6:00-9:00 pm | T/Th | 3 | VC, HV | Jane Freimiller |
| Physics | 95.103-011 | General Physics I | 9:45-11:45 am | M-Th | 3 | P: Algebra; C: 96.103, SL | Arthur Mittler |
| | 95.121-011 | Exploring the Universe | 7:30-9:30 am | M-Th | 3 | C: 96.121, Area III, SL | Paul Ring |
| | 95.141-011 | Physics I | 7:30-9:30 am | M-F | 3 (4) | C: 92.131, 96.141, SL | F. Raymond Hardy |
| | 95.144-011 | Physics II | 9:45-11:45 am | M-F | 3 (4) | P: 95.141; C: 92.132, 96.144, SL | Kunnat Sebastian |
| | 96.103-011 | Experimental General Physics I (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (1.5) | C: 95.103 or 95.201, SL | Arthur Mittler |
| | 96.141-011 | Experimental Physics I (Lab Fee) | 2:15-5:15 pm | M/W | 1 (1.5) | C: 95.141, SL | F. Raymond Hardy |
| | 96.144-011 | Experimental Physics II (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (1.5) | P: 96.141; C: 95.144, SL | David Pullen |
| | 99.101-011 | Radiation and Life | 9:45-11:45 am | M-Th | 3 | SL; C: 99.102; Area III | Department Faculty |
| 99.102-011 | Radiation and Life (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (2) | C: 99.101, SL, Area III | Department Faculty | |
| Plastics | 27.313-011 | Packaging Development | 6:00-9:00 pm | T/Th | 3 | P: 27.201 P: 27.201 (Held at Bunker Hill C.C.) P: Instructor permission P: Instructor permission P: Instructor permission | Roger Van Dam |
| | 27.331-011 | Injection Molding | 6:30-9:30 pm | M/W | 3 | | Robert Simoneau |
| | 27.331-012 | Injection Molding (Lab Fee) | 6:30-9:30 pm | M/W | 3 | | Robert Simoneau |
| | 27.451-011 | Selected Topics I: TBA | 7:00-10:00 pm | M/W | 3 | | Stephen Driscoll |
| | 27.452-011 | Selected Topics II: TBA | 7:00-10:00 pm | T/Th | 3 | | Stephen Driscoll |
| | 27.455-011 | Polymeric Coatings | 7:00-10:00 pm | T/Th | 3 | | George Drobney |
| | Note: Courses with the 27 prefix are not eligible for graduate credit. CERTIFICATE IN PLASTICS ENGINEERING TECHNOLOGY (See page 20 for required courses.) | | | | | | |
| Political Science | 46.101-011 | Introduction to American Politics | 7:00-10:00 pm | T/Th | 3 | Area I | Francis Talty |
| | 46.230-011 | Law and the Legal System | 7:00-10:00 pm | M/W | 3 | Area II, HS | Patricia Sullivan Talty |
| | 46.354-011 | Public Administration | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 46.368-011 | Middle East in the Modern World | Noon-2:00 pm | M-Th | 3 | | Dean Bergeron |
| Psychology | 47.101-011 | General Psychology | 9:45-11:45 am | M-Th | 3 | Area I, BS | Alexandria Weida |
| | 47.101-012 | General Psychology | 7:00-10:00 pm | T/Th | 3 | Area I, BS | Inga Kahn |
| | 47.209-011 | Social Psychology | 6:00-9:00 pm | M/W | 3 | Area I, Human Values, BS | Daryl Graves |
| | 47.232-011 | Psychology of Personality | Noon-2:00 pm | M-Th | 3 | Area I, BS | Joan Cannon |
| | 47.260-011 | Human Development I | 7:00-10:00 pm | M/W | 3 | Area I, BS | Phyllis Wentworth |
| | 47.260-012 | Human Development I | 9:45-11:45 am | M-Th | 3 | Area I, BS | Masahiko Minami |
| | 47.269-011 | Research Methods | Noon-2:00 pm | M-Th | 3 | P: 47.101 | I. Kahn |
| | 47.272-011 | Abnormal Psychology | 9:45-11:45 am | M-Th | 3 | P: 47.101, Area I, BS | Richard Siegel |
| | 47.276-011 | Theories of Learning | Noon-2:00 pm | M-Th | 3 | P: 47.101 | Mary Duell |
| | 47.328-011 | Dynamics of Interpersonal Relations | 7:30-9:30 am | M-Th | 3 | Area I | Kimberly Burns |
| | 47.328-012 | Dynamics of Interpersonal Relations | 7:00-10:00 pm | M/W | 3 | Area I | Richard Kushner |
| | 47.335-011 | Psychology of Women | 9:45-11:45 am | M-Th | 3 | Area I, Human Values | Berna Haberman |
| | 47.360-011 | Human Development II | 7:30-9:30 am | M-Th | 3 | P: 47.260 | C. Jacobs |
| | 47.361-011 | Prob./Issues in Child/Adolescent Psych. | 7:00-10:00 pm | T/Th | 3 | P: 47.260, 47.269 or instr. permission | Jean Saunders |
| | 47.473-011 | Seminar: Social Psychology | 2:15-5:15 pm | M/W | 3 | | Peter Hantzis |
| | 47.474-011 | Seminar in Developmental Psychology | 9:45-11:45 am | M-Th | 3 | | Joan Cannon |
| Radiological Sciences | (See Physics.) | | | | | | |
| Sociology | 48.101-011 | Introduction to Sociology | 7:30-9:30 am | M-Th | 3 | Area I, BS | Levon Chorbajian |
| | 48.101-012 | Introduction to Sociology | 7:00-10:00 pm | M/W | 3 | Area I, BS | John MacDougall |
| | 48.231-011 | Sociology of the Family | 9:45-11:45 am | M-Th | 3 | P: 48.101 | Mitra Das |
| | 48.241-011 | Women in Society | 7:00-10:00 pm | M/W | 3 | P: 48.101 | Souad Dajani |
| | 48.251-011 | Family Violence in America | 7:00-10:00 pm | M/W | 3 | P: 48.101 | Beth Herr |
| | 48.260-011 | Sociology of the Mass Media | 7:00-10:00 pm | T/Th | 3 | P: 48.101 | Levon Chorbajian |
| Technical Writing | 42.403-021 | Advanced Software Writing (14 weeks) | 7:00-10:00 pm | T | 3 | P: 42.402 | John Garison |
| Technical Writing courses are open to undergraduate and graduate students. CERTIFICATE IN TECHNICAL WRITING (See page 20 for required courses.) | | | | | | | |
| Water/Waste- Water Option | (See Civil Engineering Technology: Water/Wastewater Option.) | | | | | | |

REMINDER: THIS COURSE LISTING COMBINES THE UNIVERSITY OF MASSACHUSETTS LOWELL DAY SCHOOL COURSES AND THE CONTINUING EDUCATION COURSES. IT IS IMPORTANT TO CHECK COURSE NUMBERS AND PREREQUISITES TO ENSURE ENROLLMENT IN THE CORRECT CLASS.

Summer Session II
July 7 – August 14, 1997

Day Classes begin on July 7.
M/W Evening Classes begin on July 7 and include 2 FRIDAYS: July 18, August 1 at the regularly scheduled hours.
T/Th Evening Classes begin on July 8 and include 2 FRIDAYS: July 25, August 8 at the regularly scheduled hours.

| | No. | Title | Time | Days | Cr (Contact) | P: Prerequisite/Corequisite/Other | Instructor |
|------------|---|--------------------------|---------------|------|--------------|-----------------------------------|------------------|
| Accounting | 60.202-021 | Accounting/Managerial | 9:45-11:45 am | M-Th | 3 | P: 60.201 | Anthony Carbone |
| | 67.101-021 | Accounting Principles I | 7:00-10:00 pm | M/W | 3 | P: 67.101 | Claire Bickford |
| | 67.102-021 | Accounting Principles II | 7:00-10:00 pm | M/W | 3 | | Lisa Andrusaitis |
| | 60.202 is for students with some accounting/business experience. 67.101 is for students with no accounting experience. Students may not receive credit for both 60.201 and 67.101. NOTE: The above courses with the 67 prefix are not intended for matriculating in the Bachelor of Science degree program in the College of Management. CERTIFICATE IN ACCOUNTING (See page 20 for required courses.) | | | | | | |

Academic Credit Course Listing

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|--|---|---|---------------|--------|-------|--|----------------------|--|
| Art | 70.245-021 | Desktop Publishing: Layout & Production/ Mac (Lab Fee)* | 7:00-10:00 pm | M/W | 3 | | Kelley Hersey | |
| | 70.265-021 | Computer Art I Studio (Lab Fee) | 9:00-12:30 pm | M-Th | 3 | | Department Faculty | |
| | 70.291-021 | Introduction to Graphic Design/Mac (Lab Fee)* | 7:00-10:00 pm | T/Th | 3 | | Department Faculty | |
| | (See Computer Mathematics for Multimedia course offerings.) | | | | | | | |
| **While these courses will not directly transfer into the Art Dept.'s B.A./B.F.A. day school degree program, certain two-course clusters may be accepted for transfer upon prior dept. approval. | | | | | | | | |
| Art History | 58.101-021 | Art Appreciation | 7:00-10:00 pm | T/Th | 3 | AE, HSA, Area II | Charles Guiliano | |
| | 58.494-021 | Directed Study in Art History | TBA | TBA | 3 | P: permission of Art History Coordinator | Department Faculty | |
| | 58.496-021 | Practicum in Art History | TBA | TBA | 3 | P: permission of Art History Coordinator | Department Faculty | |
| Banking | 69.130-021 | Commercial Loan Documentation & Calling Skills | 7:00-10:00 pm | T/Th | 3 | | Michael Mullin | |
| Biological Science | 83.102-021 | Life Science II | 7:00-10:00 pm | M/W | 3 | Area III; C: 83.104, SL | Siu Lam Lee | |
| | 83.104-021 | Life Science II Lab (Lab Fee) | 7:00-10:00 pm | T/Th | 1 (2) | C: 83.102, Area III, SL | Siu Lam Lee | |
| | 83.214-021 | Human Ecology | 9:45-11:45 am | M-Th | 3 | SL | Priscilla Mattson | |
| Chemistry | 84.112-021 | General Chemistry II | Noon-2:00 pm | M-Th | 3 | P: 84.111, C: 84.114, SL | Susan McFarland | |
| | 84.114-021 | General Chemistry Lab II (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (3) | P: 84.113; C: 84.112, SL | Athena Letsou | |
| | 84.122-021 | Chemistry II | Noon-2:00 pm | M-Th | 3 | P: 84.121; Science., Eng'g & Eng'g Tech. majors; others with dept. permission; | Judith Goldsberry | |
| | | | | | | C: 84.124, SL | | |
| | 84.122-022 | Chemistry II | 6:00-9:00 pm | M/W | 3 | P: 84.121; Sci., Eng'g & Eng'g Tech ; majors; others with dept. permission; | Peter Gabriel | |
| | | | | | | C: 84.124, SL | | |
| | 84.124-021 | Chemistry Lab II (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (3) | P: 84.123; C: 84.122, SL | Department Faculty | |
| | 84.124-022 | Chemistry Lab II (Lab Fee) | 7:00-10:00 pm | T/Th | 1 (3) | P: 84.123; C: 84.122, SL | Department Faculty | |
| | 84.222-021 | Organic Chemistry II A | Noon-2:00 pm | M-Th | 3 | P: 84.221; C: 84.230, SL | Department Faculty | |
| | 84.222-022 | Organic Chemistry II A | 7:00-10:00 pm | T/Th | 3 | P: 84.221; C: 84.230, SL | Department Faculty | |
| | 84.230-021 | Organic Chemistry Lab II A (Lab Fee) | 2:15-5:15 pm | M/W/Th | 1 (4) | P: 84.229; C: 84.222, SL | Department Faculty | |
| | 84.230-022 | Organic Chemistry Lab II A (Lab Fee) | 6:00-10:00 pm | M/W | 1 (4) | P: 84.229; C: 84.222, SL | Department Faculty | |
| | 86.132-021 | Environmental Chemistry II | 7:00-10:00 pm | M/W | 3 | P: 86.131, SC | Charles Panagiotakos | |
| Cinema | 52.374-021 | Classics of Italian Cinema | 9:45-11:45 am | M-Th | 3 | Area II, HV, AE | Mario Aste | |
| | 52.380-021 | Italian Cinema: Themes & Directors | 7:30-9:30 am | M-Th | 3 | Area II, HV, AE | Mario Aste | |
| Civil Engineering | 14.204-021 | Strength of Materials | 7:30-9:30 am | M-Th | 3 | P: 14.203 | Department Faculty | |
| | 22.212-021 | Mechanics of Materials | 7:30-9:30 am | M-Th | 3 | P: 22.211, 92.225 or 92.231 | Department Faculty | |
| Civil Engineering Technology | 15.420-021 | Solid Waste Management | 7:00-10:00 pm | T/Th | 3 | P: Jr. status or instructor permission | Nihar Mohanty | |
| CERTIFICATE IN ENVIRONMENTAL TECHNOLOGY (See page 20 for required courses.) | | | | | | | | |
| CERTIFICATE IN LAND SURVEYING (See page 20 for required courses.) | | | | | | | | |
| Civil Engineering Technology Water/Waste-Water Option | 15.280-021 | Industrial Waste Treatment | 7:00-10:00 pm | M/W | 3 | | Paul Doran | |
| | 15.374-021 | Waterworks Operations Lab II (Lab Fee) | 7:00-10:00 pm | T/Th | 1 (3) | P: 15.274 | Charles Panagiotakos | |
| | 86.132-021 | Environmental Chemistry II | 7:00-10:00 pm | M/W | 3 | P: 86.131 | Charles Panagiotakos | |
| | CERTIFICATE IN WATER TREATMENT (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN WASTEWATER TREATMENT (See page 20 for required courses.) | | | | | | | |
| Computer Mathematics (see also Computer Science) | 90.171-021 | Access (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Department Faculty | |
| | 90.230-021 | Intro. to Multimedia/Windows (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Chris Perry | |
| | 90.231-022 | Graphics for Mltimedia/Windows (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.230 | Marina Jarvis | |
| | 90.231-021 | Graphics for Multimedia/Mac (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.230 | Hannalore Wideman | |
| | 90.232-021 | Desktop Video Prdctn./Windows (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 90.230 | Department Faculty | |
| | 90.233-021 | Multimedia Authoring Software | 7:00-10:00 pm | T/Th | 3 | P: 90.230 | Department Faculty | |
| | | Using Macromedia's Director/Mac (Lab Fee) | | | | | | |
| | 90.233-022 | Multimedia Authoring Software | 7:00-10:00 pm | M/W | 3 | P: 90.230 | Jeff Cummings | |
| | | Using Macromedia's Director/Windows (Lab Fee) | | | | | | |
| | 90.238-021 | Designing Multimedia for the World Wide Web/Mac (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 90.231 | Arlyn Hubbel | |
| | 90.238-022 | Designing Multimedia for the World Wide Web/Windows (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.231 | Fred Plaistedt | |
| | 90.301-021 | Java Programming/Windows (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.267 | Department Faculty | |
| | 90.478-021 | Novell Adv. Lan Admin/Windows (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 90.477 | Department Faculty | |
| | 90.480-021 | Novell Enterprise/Installation Mgt. (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: | Anthony Forgetta | |
| | 92.202-021 | Intro. to PC's & Appl. Software (Lab Fee) | 6:00-9:00 pm | M/W | 3 | SL | Department Faculty | |
| | 92.202-022 | Intro. to PC's & Appl. Software (Lab Fee) | 7:00-10:00 pm | M/W | 3 | SL | Department Faculty | |
| | 92.202-023 | Intro. to PC's & Appl. Software (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | SL | Department Faculty | |
| | 92.202-024 | Intro. to PC's & Appl. Software (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | SL | Susan L'Italien | |
| | 92.211-021* | Intro. to Programming with C (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.121 or equivalent, SL | Department Faculty | |
| | 92.211-022* | Intro. to Programming with C (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.121 or equivalent, SL | Department Faculty | |
| | 92.212-021 | Intro. to Programming with C II (Lab Fee) | 9:45-11:45 am | M-Th | 3 | P: 92.211, SL | Department Faculty | |
| | 92.220-021 | Visual Basic (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Department Faculty | |
| | 92.220-022 | Visual Basic (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Arthur Chadbourne | |
| | 92.267-021* | C Programming (Lab Fee) | Noon-2:00 pm | M-Th | 3 | P: previous programming experience | Department Faculty | |
| | 92.267-022* | C Programming (Lab Fee) | 6:00-9:00 pm | M/W | 3 | P: previous programming experience | Department Faculty | |
| | 92.267-023* | C Programming (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: previous programming experience | Department Faculty | |
| | 92.267-024* | C Programming (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | P: previous programming experience | Department Faculty | |
| | 92.267-025* | C Programming (Lab Fee) | 6:00-9:00 pm | M/W | 3 | P: previous programming experience | Department Faculty | |
| | 92.268-021 | C++ Programming (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267, SL | Department Faculty | |
| | 92.270-021 | Visual C++ (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.268 | Department Faculty | |
| | 92.270-022 | Visual C++ (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.268 | Department Faculty | |
| | 92.311-021 | Intro. to UNIX Operating System (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267 or 92.211 and 92.364 | Department Faculty | |
| | 92.311-022 | Intro. to UNIX Operating System (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.267 or 92.211 and 92.364 | Department Faculty | |
| | 92.470-021 | Data Telecommunications | 7:00-10:00 pm | M/W | 3 | P: 92.267 | Department Faculty | |
| | 92.475-021 | Computer Network Management | 7:00-10:00 pm | M/W | 3 | P: 92.472 | Raymond Vigeant | |
| | *Students may not receive credit for both 92.211 and 92.267. | | | | | | | |
| | CERTIFICATE IN COMPUTER PROFICIENCY (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN DATA TELECOMMUNICATIONS (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN UNIX (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN MULTIMEDIA APPLICATIONS (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN INTERNET SYSTEM ADMINISTRATION (See page 20 for required courses.) | | | | | | | |
| | CERTIFICATE IN WINDOWS DEVELOPMENT PROGRAMMING (See page 20 for required courses.) | | | | | | | |
| | (Also see listings under Summer I for CyberEd courses being offered in a 14-week format.) | | | | | | | |
| Computer Science (see also Computer Mathematics Option) | 91.113-021 | Exploring the Internet (Lab Fee) | 9:45-11:45 am | M-Th | 3 | | Robert Erbacher | |
| | 91.113-022 | Exploring the Internet (Lab Fee) | 7:00-10:00 pm | M/W | 3 | | Robert Erbacher | |
| | 91.113-023 | Exploring the Internet (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | M. Trutschel | |
| | 91.353-021 | Window Programming for Internet Systems (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | William Fernandez | |
| | 91.371-021 | Internet System Administration (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.311 | Department Faculty | |
| | 91.372-021 | Managing Internet Info. Services (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 92.311 | Department Faculty | |
| (See listings under Computer Science in Summer I for additional 14-week offerings.) | | | | | | | | |

Academic Credit Course Listing

| | | | | | | | |
|--|---|--|---------------|--------|-------|---|-----------------------|
| Criminal Justice (see also Paralegal Studies | 44.234-021 | Criminal Law | 7:00-10:00 pm | T/Th | 3 | | Anthony Petrosino |
| | 44.312-021 | Security Management | 7:00-10:00 pm | M/W | 3 | | John Pignato |
| | 44.351-021 | Community Based Corrections | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 44.422-021 | Victimology | 7:00-10:00 pm | T/Th | 3 | | Department Faculty |
| | 44.490-021 | Criminal Justice Research Seminar | 2:15-4:15 pm | M-Th | 3 | | E. Buzawa/G. Hotaling |
| | 44.496-021 | Criminal Justice Practicum | TBA | TBA | 3 | | Gerald Hotaling |
| CERTIFICATE IN SECURITY MANAGEMENT (See page 20 for required courses.) | | | | | | | |
| Economics | 49.201-021 | Economics I (Microeconomics) | 9:45-11:45 am | M-Th | 3 | Area I, BS | Albert Cederlund |
| | 49.201-022 | Economics I (Microeconomics) | 7:00-10:00 pm | M/W | 3 | Area I, BS | Department Faculty |
| | 49.202-021 | Economics II (Macroeconomics) | 9:45-11:45 am | M-Th | 3 | Area I, BS | Michael Carter |
| | 49.202-022 | Economics II (Macroeconomics) | 7:00-10:00 pm | T/Th | 3 | Area I, BS | Michael Carter |
| | 49.211-021 | Statistics I | 7:30-9:30 am | M-Th | 3 | P: 92.122 or equivalent, BS | Department Faculty |
| | 49.212-021 | Statistics II | 7:00-10:00 pm | T/Th | 3 | P: 49.211, BS | Thomas Macbeth |
| | 49.321-021 | International Trade Partnerships | 6:00-9:00 pm | M/W | 3 | | Zanaqui Brahim |
| CERTIFICATE IN INTERNATIONAL TRADE (See page 20 for required courses.) | | | | | | | |
| Electrical Engineering | 16.202-021 | Intro. to Circuit Theory II (7/21-8/26) | 7:00-9:00 pm | M-Th | 3 | P: 16.201, 95.245; C: 16.208 | Stephen Spurk |
| | 16.211-021 | Fundamentals of Electricity | 7:00-10:00 pm | T/Th | 3 | P: 92.132, 95.144 | A. J. Noushin |
| | 16.410,411,412 | Directed Studies | TBA | TBA | 3 | permission of chairperson | Department Faculty |
| Electronic Engineering Technology | 17.431-021 | Electromagnetic Compatibility | 7:00-10:00 pm | T/Th | 3 | P: 17.376 | Albert Paradis |
| CERTIFICATE IN ELECTRO-OPTICS (See page 20 for required courses.) | | | | | | | |
| English | 42.101-021 | College Writing I | 7:30-9:30 am | M-Th | 3 | | Department Faculty |
| | 42.101-022 | College Writing I | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 42.102-021 | College Writing II | 9:45-11:45 am | M-Th | 3 | P: 42.101 | William Hersey |
| | 42.102-022 | College Writing II | 7:00-10:00 pm | T/Th | 3 | P: 42.101 | Department Faculty |
| | 42.104-021 | College Writing II for Internatnl. Students | 7:00-10:00 pm | M/W | 3 | P: 42.103 | Department Faculty |
| | 42.212-021 | The Short Story | 7:00-10:00 pm | M/W | 3 | P: 42.102, Area II, LT | Department Faculty |
| | 42.217-021 | The Horror Story | 9:45-11:45 am | M-Th | 3 | P: 42.102, Area II, LT | Henry Venuti |
| | 42.220-021 | Personal and Reflective Writing | 7:00-10:00 pm | M/W | 3 | P: 42.102 | J. Dickerman-Nelson |
| | 42.224-022 | Business Writing | 7:00-10:00 pm | M/W | 3 | P: 42.102 | Rosalie Ryan |
| | 42.226-021 | Technical and Scientific Communication | 6:30-9:30 pm | T/Th | 3 | P: 42.102 | Dirk Messelaar |
| | 42.295-021 | History of American Literature II | 7:00-10:00 pm | T/Th | 3 | P: 42.102, Area II, LT | Henry Venuti |
| | 42.300-021 | Journalism | 7:00-10:00 pm | M/W | 3 | P: 42.102, Area II, LT | Department Faculty |
| | 42.304-021 | Creative Writing: Screenwriting | 9:45-11:45 am | M-Th | 3 | P: 42.102 | Steven Grossman |
| Environmental Technology | 15.420-021 | Solid Waste Management | 7:00-10:00 pm | T/Th | 3 | P: Junior status or instructor permission | Nihar Mohanty |
| | CERTIFICATE IN ENVIRONMENTAL TECHNOLOGY (See page 20 for required courses.) (See offerings under Civil Engineering Technology, Chemistry, Environmental Sciences, Political Science, and Water/Wastewater Option.) | | | | | | |
| Health Professions | 30.305-021 | Exercise Physiology Lecture | 9:45-11:45 am | M-F | 4 | P: Anatomy and Physiology, Chemistry | Wendy Lannon |
| | 30.307-021 | Exercise Physiology Lab (Lab Fee) | 2:15-5:15 pm | TBA | 1 | C: 30.305 | Wendy Lannon |
| | 35.102-021 | Human Anatomy and Physiology II | 9:45-11:45 am | M-Th | 3 | P: 35.101; C: 35.104, SC | John Prescott |
| | 35.104-021 | Human A. & P. II Lab (Lab Fee) | 1:00-4:00 pm | T/W/Th | 1 (3) | P: 35.103; C: 35.102, SC | Alease Bruce |
| History | 43.112-021 | U.S. History Since 1877 | 9:45-11:45 am | M-Th | 3 | Area II, HS | Patricia Hill-Zeigler |
| | 43.202-021 | Science and the Modern World | 6:00-9:00 pm | M/W | 3 | Area II, HS | Alice Walters |
| | 43.242-021 | The Second World War | 7:00-10:00 pm | M/W | 3 | Area II, HS | Donald Matheisen |
| | 43.286-021 | U.S. History Through Film | 7:00-10:00 pm | T/Th | 3 | HS | James Walsh |
| | 43.365-021 | U.S. History Since 1960 | 7:00-10:00 pm | M/W | 3 | Area II, HS | William Jordan |
| Industrial Technology | (See separate listings under Manufacturing, Plastics, and Water/Wastewater Option.) | | | | | | |
| Languages | 50.212-021 | Intermediate Conversational French II | 7:00-10:00 pm | T/Th | 3 | P: 50.211 or equivalent, Area II | Department Faculty |
| | 51.212-021 | Intermediate German II | 7:00-10:00 pm | T/Th | 3 | P: 51.211, Area II | Robert Whelan |
| | 51.491-021 | Twentieth Century German Literature | 6:00-9:00 pm | T/Th | 3 | | Robert Whelan |
| | 52.374-021 | Classics of Italian Cinema | 9:45-11:45 am | M-Th | 3 | Area II, VC, AE | Mario Aste |
| | 52.380-021 | Italian Cinema: Themes and Directors | 7:30-9:30 am | M-Th | 3 | Area II, VC, AE | Mario Aste |
| | 53.102-021 | Beginning Japanese II | 7:00-10:00 pm | T/Th | 3 | P: 53.101 | Department Faculty |
| | 53.104-021 | Beginning Russian II | 7:00-10:00 pm | M/W | 3 | P: 53.103 | Department Faculty |
| | 54.102-021 | Beginning Spanish II | 7:30-9:30 am | M-Th | 3 | P: 54.101 or equivalent | Department Faculty |
| | 54.102-022 | Beginning Spanish II | 7:00-10:00 pm | M/W | 3 | P: 54.101 or equivalent | Department Faculty |
| | 54.212-021 | Intermediate Conversational Spanish II | 9:45-11:45 am | M-Th | 3 | P: 54.211 or equivalent, Area II | Department Faculty |
| | 54.212-022 | Intermediate Conversational Spanish II | 7:00-10:00 pm | T/Th | 3 | P: 54.211 or equivalent, Area II | Department Faculty |
| Legal Studies (see also Paralegal Studies) | 41.262-021 | Introduction to Business Law | 7:00-10:00 pm | M/W | 3 | BS, Collateral Criminal Justice | Eugene Reardon |
| | 41.363-021 | Corporate and Property Law | 7:00-10:00 pm | T/Th | 3 | | Eugene Reardon |
| | 41.365-021 | Legal Environment | 7:00-10:00 pm | M/W | 3 | Human Values | James Gaffney |
| | 41.367-021 | Environmental Law | 7:00-10:00 pm | M/W | 3 | | Frank Grimaldi |
| | 41.370-021 | Real Estate Law | 7:00-10:00 pm | M/W | 3 | | R. Karl |
| | 41.381-021 | Women and the Law | 9:45-11:45 am | M-Th | 3 | | Nancy Dick |
| | 41.387-021 | Legal Research Methods (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | | Nancy Dick |
| | 41.392-021 | Wills and Trusts | 7:00-10:00 pm | M/W | 3 | | Debra Thompson |
| Management | 62.201-021 | Marketing Principles | 7:00-10:00 pm | M/W | 3 | | Department Faculty |
| | 69.276-021 | Entrepreneurial Management of New and Small Enterprises | 7:00-10:00 pm | T/Th | 3 | | Mel Epstein |
| | 69.251-021 | Personnel Management | 7:00-10:00 pm | T/Th | 3 | | P. G. Zicari |
| | 69.253-021 | Intro. to Mgmt. and Org. Behavior | 7:00-10:00 pm | T/Th | 3 | | Sharron Lovins |
| | CERTIFICATE IN PURCHASING MANAGEMENT (See page 20 for required courses.) | | | | | | |
| Manufacturing Option | (See Mechanical Engineering Technology.) CERTIFICATE IN MANUFACTURING TECHNOLOGY (See page 20 for required courses.) | | | | | | |
| Mathematics (see also Computer Mathematics | 90.111-021* | Fundamentals of Algebra | 7:00-10:00 pm | M/W | 3 | | Eugene Welch, Jr. |
| | 92.111-021 | Mathematical Perspectives | 9:45-11:45 am | M-Th | 3 | Liberal Arts majors only, Area III, MA | Alan Kaplan |
| | 92.115-021 | College Trigonometry | 7:00-10:00 pm | T/Th | 3 | P: 92.121, MA | Department Faculty |
| | 92.121-021** | Pre-Calculus Mathematics | 7:30-9:30 am | M-Th | 3 | Area III, MA | Marvin Stick |
| | 92.121-022** | Pre-Calculus Mathematics | 7:00-10:00 pm | M/W | 3 | P: 90.111 or placement exam,*** | Robert Gravina |
| | | | | | | Area III, MA | |
| | 92.122-021 | Differential Calculus | 9:45-11:45 am | M-Th | 3 | P: 92.121, Area III, MA | Alexander Olsen |
| | 92.125-021 | Calculus A | 7:00-10:00 pm | M/W | 3 | P: 92.115, MA | Allan Gibbs |
| | 92.126-021 | Calculus B | 7:00-10:00 pm | M/W | 3 | P: 92.125, MA | Theresa Schille |
| | 92.128-021 | Calculus IB | 9:45-11:45 am | M-F | 4 | P: 92.127, MA | Department Faculty |
| | 92.131-021 | Calculus I | 9:45-11:45 am | M-F | 4 | MA | Marvin Stick |
| | 92.132-021 | Calculus II | 7:30-9:30 am | M-F | 4 | P: 92.131, MA | Alan Kaplan |
| | 92.132-022 | Calculus II | 9:45-11:45 am | M-F | 4 | P: 92.131, MA | James Graham-Eagle |
| | 92.183-021 | Introduction to Statistics | 7:30-9:30 am | M-Th | 3 | P: 90.111 or equivalent, Area III, MA | Alexander Olsen |
| | 92.183-022 | Introduction to Statistics | 7:00-10:00 pm | M/W | 3 | P: 90.111 or equivalent, Area III, MA | Eric Stanley |
| | 92.202-021 | Intro. to PC's & Appl. Software (Lab Fee) | 6:00-9:00 pm | M/W | 3 | SC | Department Faculty |
| | 92.202-022 | Intro. to PC's & Appl. Software (Lab Fee) | 7:00-10:00 pm | M/W | 3 | SC | Department Faculty |
| | 92.202-023 | Intro. to PC's & Appl. Software (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | SC | Department Faculty |
| | 92.202-024 | Intro. to PC's & Appl. Software (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | SC | Susan L'Italien |

Academic Credit Course Listing

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|--|---|---|---------------|------|---------|-------------------------------------|--------------------|
| | 92.225-021 | Calculus C | 7:00-10:00 pm | M/W | 3 | P: 92.126, MA | Philip Breen |
| | 92.226-021 | Calculus D | 7:00-10:00 pm | M/W | 3 | P: 92.225, MA | Department Faculty |
| | 92.231-021 | Calculus III | 7:30-9:30 am | M-F | 4 | P: 92.132, MA | James Graham-Eagle |
| | 92.234-021 | Differential Equations | 7:00-10:00 pm | T/Th | 3 | P: 92.132 or 92.225, MA | Ronald Brent |
| | 92.267-021* | C Programming (Lab Fee) | Noon-2:00 pm | M-Th | 3 | P: previous programming experience | Ann Marie Hurley |
| | 92.267-022* | C Programming (Lab Fee) | 6:00-9:00 pm | M/W | 3 | P: previous programming experience | Department Faculty |
| | 92.267-023* | C Programming (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | P: previous programming experience | Department Faculty |
| | 92.267-024* | C Programming (Lab Fee) | 6:00-9:00 pm | T/Th | 3 | P: previous programming experience | Department Faculty |
| | 92.267-025* | C Programming (Lab Fee) | 6:00-9:00 pm | M/W | 3 | P: previous programming experience | Department Faculty |
| | 92.268-021 | C++ Programming (Lab Fee) | 7:00-10:00 pm | M/W | 3 | P: 92.267 | Mark Hertel |
| | 92.321-021 | Discrete Structures I | 7:00-10:00 pm | M/W | 3 | P: 90.112 or 92.121 | Anthony Penta |
| | 92.386-021 | Statistics for Science and Engineering | 7:00-10:00 pm | M/W | 3 | P: 92.226 or 92.132 | Lee Jones |
| | 92.435-021 | History of Mathematics | 6:00-9:00 pm | M/W | 3 | | Joyce Williams |
| | 92.485-021 | Queueing Theory | 6:00-9:00 pm | T/Th | 3 | P: 92.307 or 92.386 with permission | Mark Yin |
| *Fundamentals of Algebra (90.111) is a preparatory course and cannot be credited toward a degree program at the University of Massachusetts Lowell. | | | | | | | |
| **Students may not receive credit for both 90.112 and 92.121. Students may not receive credit for both 92.211 and 92.267. | | | | | | | |
| ***Placement exam is given the first evening of class. | | | | | | | |
| Many 500-level courses are well within the grasp of upper level undergraduates and may be used as electives. Refer to the Graduate School listing and contact the Graduate School for admissions procedures. University of Massachusetts Lowell Day students must have approval from the mathematics coordinator before taking courses with a 90 prefix. | | | | | | | |
| Mechanical Engineering | 22.213-021 | Dynamics | 9:45-11:45 am | M-Th | 3 | P: 22.211, 92.225 or 92.231 | Department Faculty |
| | 22.242-021 | Thermodynamics | 7:30-9:30 am | M-Th | 3 | P: 25.101, 25.102, 92.231, 95.144 | Y. Zilberberg |
| | 22.302-021 | Mechanical Engineering Lab I: (Lab Fee) | TBA | T/Th | 3 | P: junior status | Glen Bousquet |
| | | Instrumentation/Measurement Engineering | | | | | |
| | 22.295-021 | Material Science & Engineering | Noon-2:00 pm | M-Th | 3 | P: 94.144 | Department Faculty |
| | 22.381-021 | Fluid Mechanics | 9:45-11:45 am | M-Th | 3 | P: 22.242, 22.212,92.132 | Department Faculty |
| Mechanical Engineering Technology | 23.102-021 | Engineering Graphics II | 7:00-10:00 pm | T/Th | 2(3) | P: 23.101 | Bradley Mingles |
| | 23.222-021 | Dynamics | 7:00-10:00 pm | M/W | 3 | P: 92.126, 23.221 | Marilynn Keppler |
| | 23.243-021 | Elements of Thermodynamics II | 7:00-10:00 pm | T/Th | 3 | P: 23.241 | Vernon Oliver |
| | 23.419-021 | CAM (Lab Fee) | 7:00-10:00 pm | T/Th | 3 | P: 23.305 or 23.306 | David Ierardi |
| | 23.426-021 | Quality Systems Certification/ISO 9000 | 7:00-10:00 pm | T/Th | 3 | P: 23.314 | Charles Priest |
| | CERTIFICATE IN MANUFACTURING TECHNOLOGY (See page 20 for required courses.) | | | | | | |
| Multimedia Applications | See Computer Mathematics Option and Computer Science | | | | | | |
| Music | 71.100-021 | Fundamentals of Musicianship | 7:30-9:30 am | M-Th | 3 | Music Majors only | Mark Peterson |
| | 71.110-021 | Basic Music Theory | 7:00-10:00 pm | M/W | 3 | Non-Music majors, Area II, AE | Juanita Tsu |
| | 71.202-021 | Music Theory IV | 9:45-11:45 am | M-Th | 3 | P: 71.201, Music majors only | Mark Peterson |
| | 71.203-021 | Solfège III | 9:45-11:45 am | M-Th | 3 | P: 71.104 | Lisa Cleveland |
| | For Summer Music Education Program see page 14. | | | | | | |
| Paralegal (see also Legal Studies and Criminal Justice) | 41.287-021 | Legal Writing | 7:00-10:00 pm | M/W | 3 | | Nancy Dick |
| | 41.363-021 | Corporate and Property Law | 7:00-10:00 pm | T/Th | 3 | | Eugene Reardon |
| | 41.370-021 | Real Estate Law | 7:00-10:00 pm | M/W | 3 | | Russell Karl |
| | 41.387-021 | Legal Research Methods | 7:00-10:00 pm | T/Th | 3 | | Jane McElligott |
| | 41.392-021 | Wills, Trusts and Estates | 7:00-10:00 pm | M/W | 3 | | Debra Thompson |
| (Please see admission requirements to the Paralegal Certificate on page 20.) | | | | | | | |
| Courses are open only to students currently enrolled in the Paralegal Certificate. Courses are available to other students on a space available basis. | | | | | | | |
| Philosophy | 45.201-021 | Introduction to Philosophy | 9:45-11:45 am | M-Th | 3 | Area II and VC, HV | Elizabeth Gleason |
| | 45.201-022 | Introduction to Philosophy | 7:00-10:00 pm | M/W | 3 | Area II and VC, HV | Donald LeBlanc |
| | 45.202-021 | Introduction to Logic | 7:00-10:00 pm | T/Th | 3 | Area II and VC | Donald LeBlanc |
| | 45.203-021 | Introduction to Ethics | 7:00-10:00 pm | T/Th | 3 | Area II and VC, HV | Michael Koran |
| Physics | 95.104-021 | General Physics II | 7:30-9:30 am | M-Th | 3 | P: 95.103; C: 96.104, SL | Roger McLeod |
| | 95.121-021 | Exploring the Universe | 7:30-9:30 am | M-Th | 3 | SC, Area III | Paul Ring |
| | 95.141-021 | Physics I | 9:45-11:45 am | M-F | 3 (4) | P: 92.131, C: 96.141, SL | Paul Ring |
| | 95.144-021 | Physics II | 9:45-11:45 am | M-F | 3 (4) | P: 95.141, 92.132, C: 96.144, SL | Roger McLeod |
| | 96.104-021 | Experimental General Physics II (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (1.5) | C: 95.104, SL | Department Faculty |
| | | (2 days per week) | | | | | |
| | 96.141-021 | Experimental Physics I (Lab Fee) | 2:15-5:15 pm | M/W | 1 (1.5) | C: 95.141, SL | Department Faculty |
| | | (2 days per week) | | | | | |
| | 96.144-021 | Experimental Physics II (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (1.5) | P: 96.141; C: 95.144, SL | David Pullen |
| | (2 days per week) | | | | | | |
| | 99.101-021 | Radiation and Life | 9:45-11:45 am | M-Th | 3 | C: 99.102, Area III, SL | Department Faculty |
| | 99.102-021 | Radiation and Life Lab (Lab Fee) | 2:15-5:15 pm | T/Th | 1 (2) | C: 99.101, Area III, SL | Department Faculty |
| Plastics | 27.453-021 | Selected Topics III | 7:00-10:00 pm | M/W | 3 | P: Instructor permission | Stephen Driscoll |
| | 27.454-021 | Selected Topics IV | 7:00-10:00 pm | T/Th | 3 | P: Instructor permission | Stephen Driscoll |
| | 27.456-021 | Fiber Reinforced Plastics | 7:00-10:00 pm | T/Th | 3 | P: Instructor permission | George Drobney |
| | Courses with the 27 prefix are not eligible for graduate credit. | | | | | | |
| CERTIFICATE IN PLASTICS ENGINEERING TECHNOLOGY (See page 20 for required courses.) | | | | | | | |
| Political Science | 46.101-021 | Introduction to American Politics | 7:30-9:30 am | M-Th | 3 | Area I, BS | Dean Bergeron |
| | 46.121-021 | Introduction to International Relations | 7:00-10:00 pm | M/W | 3 | Area I, BS | Paula McCabe |
| | 46.357-021 | American Environmental Politics | 9:45-11:45 am | M-Th | 3 | VC, BS | Dean Bergeron |
| Psychology | 47.101-021 | General Psychology | 7:30-9:30 am | M-Th | 3 | Area I, BS | Virginia Sheen |
| | 47.101-022 | General Psychology | 7:00-10:00 pm | M/W | 3 | Area I, BS | Daryl Graves |
| | 47.209-021 | Social Psychology | 7:30-9:30 am | M-Th | 3 | Area I, Human Values, BS | Kevin Callahan |
| | 47.232-021 | Psychology of Personality | 9:45-11:45 am | M-Th | 3 | P: 47.101, Area I, BS | Elizabeth Murphy |
| | 47.272-021 | Abnormal Psychology | 6:00-9:00 pm | T/Th | 3 | P: 47.101, Area I, BS | John Bayliss |
| | 47.276-021 | Theories of Learning | Noon-2:00 pm | M-Th | 3 | | Mary Duell |
| | 47.328-021 | Dynamics of Interpersonal Relations | 2:15-5:15 pm | M/W | 3 | Area I | Richard Kushner |
| | 47.335-021 | Psychology of Women | 6:00-9:00 pm | M/W | 3 | | Charlene Drake |
| | | | | | | | |
| Radiological Sciences | (See Physics.) | | | | | | |
| Sociology | 48.101-021 | Introduction to Sociology | 7:30-9:30 am | M-Th | 3 | Area I, BS | Levon Chorbajian |
| | 48.101-022 | Introduction to Sociology | 7:00-10:00 pm | T/Th | 3 | Area I, BS | Levon Chorbajian |
| | 48.220-021 | Self Assessment & Career Development | 7:00-10:00 pm | M/W | 3 | | Leonard Harlow |
| | 48.251-021 | Child Abuse and Incest | 7:00-10:00 pm | T/Th | 3 | P: 48.101 | Beth Herr |
| | 48.317-021 | Sociology of Genocide | 7:00-10:00 pm | M/W | 3 | P: 48.101, VC | Jack Porter |
| Water/Wastewater Technology Option | (See Civil Engineering Technology: Water/Wastewater Option.) | | | | | | |

REMINDER: IT IS IMPORTANT TO CHECK COURSE NUMBERS AND PREREQUISITES TO ENSURE ENROLLMENT IN THE CORRECT CLASS.

Summer Session I

GRADUATE COURSES

Except as noted: Day classes begin on May 19.
M/W Evening Classes begin on May 19 and include 3 Fridays: May 30, June 13, June 27.
T/Th Evening Classes begin on May 20 and include 2 Fridays: June 6, June 20.

| | No. | Title | Time | Days | Cr | P: Prerequisite/Corequisite/Other | Instructor |
|--|--|---|-----------------|------|-------|--|--------------------|
| Business Administration | For course listing please call the MBA office at 508-934-2848. | | | | | | |
| Civil Engineering | 18.503-011 | GIS in Environmental Studies (Lab Fee) | 6:30-9:30 pm | M/W | 3 | | William Hamilton |
| Computer Science | 91.500-021 | Fundamental Models (Lab Fee) (14 weeks) | 6:00-9:00 pm | W | 3 | | Fred Lewis |
| | 91.502-021 | Foundations of Comp. Sci. (Lab Fee) (14 weeks) | 7:00-10:00 pm | T | 3 | | Charles Steele |
| | 91.510-021 | Mechanized Discrete Mathematics (14 weeks) | 6:00-9:00 pm | M | 3 | | William Farmer |
| | 91.550-021 | Topics in Virtual Reality (Lab Fee) (14 weeks) | 6:00-9:00 pm | M | 3 | | Paul Breen |
| | 91.563-021 | Data Communications I (Lab Fee) (14 weeks) | 6:00-9:00 pm | M | 3 | | Byung Kim |
| Criminal Justice | 44.593-011 | Computer Crime | 7:30-9:30 am | M-Th | 3 | | Joseph Lipchitz |
| | 44.622-011 | Family Violence | 6:00-9:00 pm | M/W | 3 | | Eve Buzawa |
| | 44.733-011 | Graduate Project in Criminal Justice | TBA | TBA | 3 | | Gerald Hotaling |
| | 44.746-011 | Masters Thesis in Criminal Justice | TBA | TBA | 3 | | Gerald Hotaling |
| Electrical Engineering | 16.528-011 | Alternate Energy Sources (6 weeks) | 6:00-9:00 pm | M/W | 3 | P: Instructor permission | Ziyad Salameh |
| | 16.542-021* | Engineering Appl. of JAVA Prog. (Lab Fee) | 9:45-11:45 am | M-Th | 3 | P: 16.211, Sr. Status | Russell Laste |
| | 16.700-021* | Seminar in E.E. | 6:00-8:00 pm | T/Th | 3 | P: Minimum 15 graduate credits | David Wade |
| | 16.721-021* | Special Topics: Fuzzy Systems Theory and Applications | 6:00-8:00 pm | M/W | 3 | P: Introductory Logic Design | Syama Chaudhuri |
| | 16.724-021* | Special Topics: Neural Networks | 6:00-8:00 pm | T/Th | 3 | | Khanh Luong |
| | 16.727-021* | Special Topics: FPGA Logic Design Tech. | 6:00-8:00 pm | T/Th | 3 | P: 16.265 | James Moran |
| *NOTE: All Electrical Engineering courses begin the week of May 19 and end the week of July 21 unless otherwise noted. | | | | | | | |
| Health Professions | 34.615-011 | Clinical Education I | 8:00 am-5:00 pm | M-S | 2 (4) | P: 1st yr. Physical Therapy Graduate students only | L. Falvo |
| | 32.629-011 | Long-Term Care Administration | TBA | T/Th | 3 | | Chester Jakubiak |
| Mathematics | 92.500-011 | Discrete Structures | 3:30-6:30 pm | T/Th | 3 | | Alan Doerr |
| | 92.516-011 | Pattern Recognition & Neural Networks | 5:30-8:00 pm | M/W | 3 | P: 92.386/Linear Algebra or equivalent | Lee Jones |
| | 92.520-011 | Mathematical Problem Solving | 6:00-9:00 pm | T/Th | 3 | P: 92.226 or 92.231 or equivalent | Kenneth Levasseur |
| | 92.521-011 | Algebraic Structures I | Noon-2:00 pm | M-Th | 3 | P: 92.221 or 92.321 | Alan Doerr |
| | 92.550-011 | Mathematical Modeling | 5:30-8:00 pm | T/Th | 3 | P: 92.231 or equivalent | James Graham-Eagle |
| | 92.580-011 | Combinatorics | 5:30-8:00 pm | M/W | 3 | P: Calculus & Discrete Struct.or equiv. | Mark Yin |
| Plastics | 26.500-011 | Advanced Projects Plastics (Non lab) | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.500-012 | Advanced Projects Plastics (Lab) | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.538-011 | Selected Topics: Plastics | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.567-011 | Dynamic Mechanical Properties I | TBA | TBA | 3 | P: Instructor permission | Stephen Driscoll |
| Psychology | 47.531-011 | Substance Abuse | 6:00-9:00 pm | T/Th | 3 | | Richard Siegel |
| | 47.542-011 | Psychopathology and Mental Health | 6:00-9:00 pm | M/W | 3 | | Peter Hantzis |
| Radiological Science | 98.681-011 | Graduate Medical Physics | TBA | TBA | 3 | | Department Faculty |
| | 98.687-011 | Graduate Medical Physics Internship | TBA | TBA | 3 | | Department Faculty |
| | 98.697-011 | Adv. Graduate Medical Physics Internship | TBA | TBA | 3 | | Department Faculty |

Summer Session II

GRADUATE COURSES

Except as noted: Day Classes begin on July 7.
M/W Evening Classes begin on July 7 and include 2 Fridays: July 18, August 1.
T/Th Evening Classes begin on July 8 and include 2 Fridays: July 25, August 8.

| | No. | Title | Time | Days | Cr(Co) | P: Prerequisite/Corequisite/Other | Instructor |
|--|--|--|-----------------|------|--------|------------------------------------|------------------------|
| Business Administration | 62.501-021 | Marketing Foundations | 6:00-9:00 pm | T/Th | 3 | | Department Faculty |
| | 62.670-021 | International Marketing | 6:00-9:00 pm | M/W | 3 | | Department Faculty |
| For course listing please call the MBA office at 508-934-2848. | | | | | | | |
| Computer Science | (See listings under Summer I for 14-week offerings.) | | | | | | |
| Criminal Justice | 44.733-021 | Graduate Project | TBA | TBA | 3 | | Gerald Hotaling |
| | 44.746-021 | Masters Thesis | TBA | TBA | 3 | | Gerald Hotaling |
| Electrical Engineering) | (See listings under Summer I for 14-week offerings.) | | | | | | |
| Health Professions | 34.634-021 | Clinical Education Experience II | 8:00 am-4:00 pm | TBA | 2 (4) | P: Clinical Education Experience I | S. O'Sullivan/L. Falvo |
| | | | | | | | Department Faculty |
| Mathematics | 92.523 | Linear Algebra | 3:30-6:30 pm | M/W | 3 | | Department Faculty |
| | 92.535-021 | History of Mathematics | 6:00-9:00 pm | M/W | 3 | | Joyce Williams |
| | 92.585-021 | Queueing Theory | 6:00-9:00 pm | T/Th | 3 | | Mark Yin |
| Plastics | 26.500-021 | Advanced Projects Plastics (Non lab) | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.500-022 | Advanced Projects Plastics (Lab) | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.539-021 | Selected Topics: Plastics | TBA | TBA | 3 | P: Instructor permission | Rudolph Deanin |
| | 26.568-021 | Dynamic Mechanical Properties II | TBA | TBA | 3 | P: Instructor permission | Stephen Driscoll |
| Psychology | 47.504-021 | The Family System | 6:00-9:00 pm | M/W | 3 | | Jerry Schwartz |
| | 47.551-021 | Psychosocial Aspects of Aging | 6:00-9:00 pm | T/Th | 3 | | Kevin Callahan |
| | 47.623-021 | Intervention/Child/Adolescent | 7:00-10:00 pm | T/Th | 3 | | Department Faculty |
| Radiological Sciences | 98.687-021 | Graduate Medical Physics Internship | TBA | TBA | 3 | | Department Faculty |
| | 98.697-021 | Adv. Graduate Medical Physics Internship | TBA | TBA | 3 | | Department Faculty |

Registration Form for Credit and Noncredit Courses

University of Massachusetts Lowell

University College/Continuing Education

One University Avenue

Lowell, MA 01854

PLEASE USE INK AND PRINT

✓ CHECK APPROPRIATE REGISTRATION STATUS:

☐ Summer I (May-June)

☐ Summer II (July-Aug)

☐ Graduate

☐ Noncredit/Professional Institutes

Social Security No.

Name

(Last)

(First)

(Middle)

Street & No.

City & State

Zip Code

Date

Sex: M F

Date of Birth

Work phone () -

Home phone () -

Email

Company Name

Street Address

City & State

Handicap? yes no JTPA?

Change of name or address since last registration? yes no

Former name

Will you be using veteran benefits? yes no

State/Active Duty

G.I. Bill

COURSES FOR WHICH YOU ARE REGISTERING

| COURSE NUMBER | COURSE TITLE | CREDITS |
|---------------|--------------|---------|
| | SUMMER I | |
| | | |
| | SUMMER II | |
| | | |

Tuition and Fees*

| Registration Fee | |
|------------------|-----------|
| Credit | Noncredit |
| \$40.00 | \$15.00 |
| Tuition | |
| Lab | |
| Late fee | |
| Other | |
| Total | \$. |

Complete if paying by Credit Card:

☐ MASTERCARD

☐ VISA

Acct.No.

Expiration Date /

Customer Signature

* Note: If you are registering for both credit and noncredit courses, please photocopy the registration form and register for them separately. Payment for credit and noncredit courses should also be made separately from each other.



Credit Courses On-Site At Your Company

Help your employees learn the skills and knowledge they need to keep up in today's rapidly changing workplace.

We can offer over 300 individual courses in areas such as Computers, Electrical/Civil/Mechanical Engineering Technology, Management, and Manufacturing on-site, at your facility. Programs can be custom designed to meet your company's specific training needs.

On-site Certificate Programs are also available in Accounting, Banking, Computer-Assisted Manufacturing, Computer Engineering Technology, Computer Proficiency, Data/Telecommunications, Electro-Optics, Electronics Technology, Engineering Skills, Environmental Technology, Graphic Design & Digital Imaging, Hazardous Waste Management, Internet Systems Administration, Land Surveying, Manufacturing Technology, Multimedia Applications, Nutrition, Paralegal Studies, Plastics Engineering Technology, Purchasing Management, Quality Assurance, Security Management, Spanish, Technical Writing, UNIX, Wastewater Treatment, Water Treatment, and Windows Development Programming.

For Further information about on-site training programs, please contact the Division of Continuing Education at (508) 934-2405.

Summer Undergrad (UG) and Graduate (G)

Music Education PROGRAMS

Orff-Schulwerk Teacher Training Workshops

Levels, I (ug), II (g), III (g) (3 credits)

July 7-11, July 14-18

Dalcroze Eurhythmics

July 21-31

Multicultural Music Education

(3 credits, ug, g)

July 21-26 and July 28-30

ABCDs of Brass Pedagogy

(1 credit, ug, g)

July 28-July 31

Show Choir and Musical Theatre

August 4-13

Silver Burdett Ginn — "The Music Connection"

August 12-13

Popular Choral Techniques

August 11-21

A Splash of Kodaly: Philosophy, Materials, and Methodology

(1 credit, ug, g)

August 4-8

Marching Band Techniques

(3 credits, ug, g)

July 31, August 1; August 4-8

Macmillan "Share the Music" Workshop, K-8

(noncredit)

August 22

For a 1997 Summer Music Education brochure with detailed information, please call the Office of Special Programs at (508) 934-2405.

Summer 97 CyberEd Schedule

UMass Lowell's CyberEd Program brings the classroom to you! Earn a Certificate in UNIX on-line or apply appropriate courses to your current certificate or degree program. All CyberEd courses will be conducted for 14 weeks. For the latest information regarding our on-line courses, visit the CyberEd Web site at "<http://cybered.uml.edu>", check out the listings in this bulletin under Summer I, call (508) 934-2474 or (508) 934-2261.

| Course # | Course Name (All 3 credit courses) | Instructor | Tuition* |
|------------|--|---------------|----------|
| 42.221-021 | Writing for Interactive Media <i>Requires Flow Charting software</i> | T. Garrand | \$375 |
| 42.224-021 | Business Writing | N. Brown | \$375 |
| 92.220-023 | Visual Basic <i>Requires Visual Basic 4.0</i> | R. Chhatwal | \$375 |
| 90.239-021 | Multimedia Scripting w/Director's Lingo <i>Requires Macromedia Director 5.0</i> | J. Adams | \$375 |
| 90.301-022 | Java Programming <i>Requires Sun Java Development Kit</i> | M. Cohen | \$375 |
| 91.373-022 | HTML Development | Dept. Faculty | \$375 |
| 92.267-026 | C Programming <i>Requires C Compiler software</i> | T. Niesen | \$375 |
| 92.268-023 | C++ Programming <i>Requires C Compiler software</i> | M. Hertel | \$375 |
| 92.311-023 | Intro. to UNIX | F. Vegliante | \$375 |
| 92.312-021 | UNIX Shell Programming | M. Richards | \$375 |
| 92.419-021 | Computer Alg. w/ Mathematica <i>Requires Mathematica 3.0</i> | K. Levasseur | \$375 |

To register for a UMass Lowell CyberEd course, see the registration form above, or call(508) 934-2700. Be sure to provide your emailaddress when you register!
*Additional \$50 lab fee required for each course.

Additional credit and non-credit CyberEd courses are available through UMass Dartmouth. Visit their Web Site at "<http://www3.umassd.edu>" or call (508) 999-9129.

'97 Summer

WRITING PROGRAM

42.302-011

Creative Writing: Fiction

Instructor: Richard Farrell, award-winning fiction writer and filmmaker

Tues., Thurs., 7-10 pm

42.303-011

Creative Writing: Poetry

Instructor: Judith Dickerman-Nelson, poet and founder of the Lowell Review

Mon., Wed., 7-10 pm

42.404-011

Freelance Writing

Instructor: Jay Atkinson, fiction/non-fiction writer, author of the novel, "Caveman Politics"

Mon., Wed., 6-9 pm

Summer Reading Series

Free and open to the public. Readings from faculty, published writers, and students

Location:

O'Leary Library 222 (South Campus)

Dates:

Wed., May 28; Thurs., June 5; Thurs., June 19, Thurs., June 26

Time:

7-8 pm

Wednesday, May 28

Jay Atkinson

Thursday, June 5

Guest reader, TBA

Thursday, June 19, Faculty Reading

Judith Dickerman-Nelson, Richard Farrell, Katya Reimann

Thursday, June 26

Student reading



Fundamentals of Engineering Exam Review Course (EIT) for Fall 1997 General Examination

Wednesdays, 6-9 pm, starting August 6
12 classes

For further information, contact the Special Programs Office at (508) 934-2405.

COMMUNITY EDUCATION (Noncredit) Course Listing

COMMUNITY EDUCATION

Noncredit Course Listing

If you have any questions regarding the Community Education Noncredit Courses, please call the office of Enrollment Services/Continuing Education at (508) 934-4996 or fax at (508) 934-3087.

See registration dates and procedures on page 2.

Tuition and fees.

The tuition is indicated after each course description. There is a registration fee of \$15.00 which is listed on the registration form. In addition to the tuition and fees listed, certain courses require the purchase of materials and equipment. Every effort is made to keep these additional expenses to a minimum.

Senior Citizen Waivers

Participants who are 60 and older may register for a Community Education course on a "space available" basis without payment of tuition charges. A fee payment of \$15.00 per course will be charged and there may be a charge for class materials or texts.

PLEASE NOTE: Courses marked with an asterisk(*) are not available at the reduced tuition rates for senior citizens, state employees, etc.

ART, HOME, DESIGN & CRAFTS

Basic Drawing Techniques: From Still Life to Human Figure [00.101-011] Summer I

Instructor: David Lowrey
A variety of drawing assignments from still life to figures using different drawing media. The class will cover the principles of drawing as well as life drawing using the "right side of the brain."
Tues: 7:00-9:30pm-6 wks-Begins 5/20/97 - Tuition: \$55.00

Portrait Drawing/Painting [00.103-011] Summer I

Instructor: David Lowrey
This course covers the techniques of drawing and painting the human face. Students may work in pastels or oils and advance at their own pace.
Mon: 7:00-9:30pm-6 wks-Begins 5/19/97 - Tuition: \$55.00

Basic Interior Design [see #'s below] Summer I

Instructor: Nancy Lesofsky
Learn how fabric, light, wall and floor treatments, together with furnishings and accessories can be combined to create unique environments reflecting individual tastes and life-styles.
Section A: Thurs: 5:00-7:00pm-4 wks-Begins 5/22/97- Course #: [00.133-011] - Tuition: \$50.00
Section B: Thurs: 7:00-9:00pm-4 wks-Begins 5/22/97- Course #: [00.133-012] - Tuition: \$50.00

How to Open and Run a Bed & Breakfast Inn [00.145-011] Summer II

Instructor: Greg Brown
Helps prospective innkeepers understand whether or not this is the lifestyle and business climate that they are looking for. Addresses four major areas: locating a bed & breakfast, financing your inn, licenses and zoning, marketing and advertising.
Sun: 9:00am-5:00pm-1 day-8/10/97 - Tuition: \$75.00

Introduction to Home Herbal Medicine [00.166-011] Summer I

Instructor: Margi Flint
Learn to prepare simple remedies for family health care. Preparation of extracts, liniments, salves, teas, baths, steams, and compresses will be discussed and procedures will be described.
Sat: 10:00am-5:00pm-1 day-4/12/97 - Tuition: \$35.00

Calligraphy [00.112-011] Summer I

Instructor: Sr. Cecile Duquette, s.c.o.
Students explore the chancery cursive or italics, the uncial and the Gothic styles. Activities include greeting cards, quotes, diplomas, awards, and certificates.
Thurs: 5:30-7:30pm-6 wks-Begins 5/22/97 - Tuition: \$60.00

MUSIC, LITERATURE & HISTORY

Basic Screenwriting [00.260-011]

Instructor: Scott Anderson
Learn the basic elements of dramatic writing structure and develop a full-length screenplay in outline form, long with a "polished" first act (25-30 pages).
Sat: 9:30am-4:30pm-6 wks-Begins 5/24/97 - Tuition \$105.00

Writing and Illustrating Children's Books for Writers [00.261-011] Summer I

Instructor: Robin Hanson
This course is designed to teach all elements of children's book creations from idea to finish. We will make a book dummy and learn the process of submitting work to publishers. Key focus is on the writing. Beginners welcome.
Tues: 6:00-9:00pm-6 wks-Begins 5/20/97 - Tuition: \$60.00

Writing and Illustrating Children's Book for Artists [00.217-011] Summer I

Instructor: Robin Hanson
This course is designed to teach all aspects of children's book creations, with a focus on the design and illustration of books. Taught by an award winning illustrator and author of children's books.
Thurs: 6:00-9:00pm-6 wks-Begins 5/22/97 - Tuition: \$60.00

Creative Writing for Serious Beginners [00.220-011]

Instructor: Monique Healy
The goals of this course are for each student to acquire a background in creative writing techniques and to complete a short story suitable for publication. It will cover style, plot, setting, and character development and will also present resources and guidelines for submission to publishers.
Wed: 6:30-8:30pm-6 wks-Begins 5/21/97 - Tuition: \$55.00

Vocal Workshop [00.260-011] Summer I

Instructor: Deb Gruber
This introductory workshop will expose students to the fundamentals of singing. Through fun exercises and favorite showtunes and popular songs, we will explore such concepts as relaxation, posture, breathing, coordination, resonance, flexibility, stylistic expression, and articulation. The format is both recreational and educational.
Mon: 6:30-9:30pm-1 eve-5/19/97 - Tuition: \$60.00

NEW! The Chord Approach to Piano [00.261-011] Summer I

Instructor: Deb Gruber
Introduction to chords and their application to pop piano styles. Chords give the beginner an alternative to note reading, and allow the more advanced player to break free from dependence on written music. Ability to read Treble Clef recommended. Materials fee of \$20.00 (for workbook and 60 min. practice cassette) will be collected in class by instructor.
Mon: 6:30-9:30pm-1 eve-6/2/97 - Tuition: \$60.00

Celtic Music and Dance [00.262-011] Summer I

Instructor: Joanne Gagnon-Ketchen
Since the premiere of the Riverdance production in the United States, the popularity of Celtic music and dance has soared. This course will cover the roots of Celtic music and dance from ancient times to the current scene. Discover what makes it so intriguing today!
Tues: 6:30-8:30pm-6 wks-Begins 5/20/97 - Tuition: \$80.00

ESL, LANGUAGE & CULTURE

Spanish for the Health Professional [00.373-011] Summer I

Instructor: Lisa Clough
Whether you work in a hospital, clinic or private office, you've no doubt found yourself in a situation where you were unable to understand or communicate with a Spanish speaking patient. This course, designed for beginners, will focus on conversational Spanish and communication techniques designed to make your job easier.
Tues: 7:00-9:00pm-6 wks-Begins 5/20/97 - Tuition: \$55.00

Spanish for Business [00.374-011] Summer I

Instructor: Lisa Clough
This course, designed for beginners, will focus on practical terminology used in daily business communications. Important cultural topics are also covered, such as proper greetings and introductions, Latin American business practices and expectations, etc.
Wed: 7:00-9:00pm-6 wks-Begins 5/21/97 - Tuition: \$55.00

Conversational Spanish I [00.321-011] Summer I

Instructor: Fausta Asimakopoulos
Designed for the person who wants to become familiar with Spanish, this course emphasizes useful, everyday conversation that is essential when traveling or working.
Tues: 5:30-7:30pm-6 wks-Begins 5/20/97 - Tuition: \$50.00

Conversational Spanish II [00.322-011] Summer I

Instructor: Fausta Asimakopoulos
A continuation of Conversational Spanish I, with additional emphasis on conversational skills.
Wed: 5:30-7:30pm-6 wks-Begins 5/21/97 - Tuition: \$50.00

Conversational Spanish III [00.365-011] Summer I

Instructor: Fausta Asimakopoulos
A continuation of conversational Spanish II, with additional emphasis on conversational skills and awareness of Spanish culture.
Thurs: 5:30-7:30pm-6 wks-Begins 5/22/97 - Tuition: \$50.00

Beginning Conversational French [see #'s below] Summer I

Instructors: Emile Tabea and Dr. Roger Lacerte
Designed for the beginner with little or no knowledge of the French language. This course takes a conversational approach emphasizing vocabulary, correct pronunciation, and proper word order.
Section A: Mon: (Lacerte) 7:00-9:00pm-6 wks
Begins 5/22/97-Course #: [00.331-011]
Section B: Sat: (Tabea) 10:00am-12:00pm-6 wks
Begins 5/24/97-Course #: [00.331-012] - Tuition: \$60.00

Continuing Conversational French [see #'s below] Summer I

Instructors: Emile Tabea and Dr. Roger Lacerte
A continuation of Beginning French, providing additional exposure to the French language.
Section A: Thurs: (Lacerte) 7:00-9:00pm-Begins 5/22/97
Course #: [00.332-011]
Section B: Wed: (Tabea) 7:00-9:00pm-6 wks
Begins 5/21/97-Course #: [00.332—012]
Tuition: \$60.00

Beginning Chinese [see #'s below] Summer I & II

Instructor: Mei-Ling Diep
Basic grammar and pronunciation will be introduced in this course. Learn to recognize and write simple Chinese characters. Topics include introduction and descriptions of persons, making simple telephone calls and asking directions.
Section A: Mon: 6:30-9:30pm-6 wks
Begins 5/19/97-Course #: [00.359.011]
Section B: Mon: 6:30-9:30pm-6 wks
Begins 7/9/97-Course #: [00.359-021]
Tuition: \$90.00

English as a Second Language for Intermediates [see #'s below] Summer I & II

Instructor: Gailanne Desmond
Intended to help the student who has already acquired some knowledge of the English language. It is designed to further develop the mechanics of grammar and usage. Intense practice on building a larger and more meaningful vocabulary.
Section A: Thurs: 5:30-7:30pm-6 wks-Begins 5/22/97
Course #: [00.352-011]
Section B: Thurs: 5:30-7:30pm-6 wks-Begins 7/10/97
Course #: [00.352-021]
Tuition: \$60.00

*English (American) Pronunciation for Foreign-Born Speakers I [see #'s below] Summer I & II

Instructor: Gailanne Desmond
Developed for those who have a good command of the English language, but find their accent to be a problem. Students will improve listening skills necessary to discriminate between sounds. A personal speech analysis and participation in drill activities to improve pronunciation patterns will also be a part of the class. Students are encouraged to bring a tape recorder and blank cassettes to class.
Section A: Tues: 6:00-7:30pm-6 wks-Begins 5/20/97
Course #: [00.354-011]
Section B: Tues: 6:00-7:30pm-6 wks-Begins 7/8/97
Course #: [00.354-021]
Tuition: \$60.00

English as a Second Language for Beginners [00.350-011] Summer I

Instructor: Alexander Boch
For the beginner who is somewhat familiar with the English language. Course includes drilling in the basics of grammar, usage, and vocabulary.
Sat: 10:00 am-12:00 noon-6 wks-Begins 5/24/97 - Tuition: \$60.00

English as a Second Language Writing for Everyday Use [00.356-011] Summer I

Instructor: Sr. Cecile Duquette, s.c.o.
Beginners to intermediate level students develop the writing skills necessary in practical life situations. Sentence structure and meaningful, well-constructed paragraphs (with emphasis on individual differences) are the main objectives of this course.
Tues: 5:30-7:30 pm-6 wks-Begins 5/20/96 - Tuition: \$60.00

English as a Second Language Advanced [00.353-011] Summer I

Instructor: Sr. Cecile Duquette, s.c.o.
For students who have enough English grammar to be able to understand and converse. Through intense grammatical structures and listening/comprehension skills, students will feel more comfortable using English at work and at home.
Wed: 5:30-7:30 pm-6 wks-Begins 5/21/96 - Tuition: \$60.00

NEW!

Graphic Design & Digital Imaging Certificate

Interested in breaking into graphic design and electronic publishing?

The Certificate Program in Graphic Design & Digital Imaging offers an innovative mix of traditional design courses along with several courses in the latest publishing technologies.

For more information on the Graphic Design & Digital Imaging Certificate see page 20 or call (508) 934-2493.

DANCE, HEALTH, FITNESS, SPORTS & RECREATION

- Headache Workshop**

[00.561-011]
Summer I

Instructor: Dr. Gerard Cassista, D.C.
A workshop which focuses on actual causes of headaches and neck pain. Migraine headaches, cluster headaches, stress headaches and pre-menstrual headaches are also discussed. Also specific treatment as well as exercises will be covered.
Tues: 7:00-9:00pm-1 eve.-6/3/97 - Tuition: \$25.00
- Low Back Pain Workshop**

[00.562-011]
Summer I

Instructor: Dr. Gerard Cassista, D.C.
A workshop designed to help clarify the difference between low back pain due to disc problems, versus joint problems. Specific causes of low back pain are covered along with specific treatments.
Tues: 7:00-9:00pm-1 eve-6/10/97 - Tuition: \$25.00
- Self Discovery Through Dance**

[00.503-011]
Summer I

Instructor: Lynn Simon
There is a world of movement! Find joy through movement, improvisation, visualization, and music, while we frolic and explore forms of dance. No experience necessary. Wear comfortable clothing.
Sat: 12:00-1:30pm-6 wks-Begins 5/24/97 - Tuition: \$40.00

- *Yoga I**

[see #'s below]
Summer I

Instructor: Lynn Simon
Yoga is a science of self-care, using deep relaxation without the strain and fatigue of other types of exercise. Relieve tension and stress while strengthening, stretching, and toning the body. We will learn postures, breathing and relaxation techniques. Bring a mat or blanket, dress comfortably.
Section A: Tues: 6:30-8:00pm-6 wks-Begins 5/20/97
Course #: [00.504-011]
Section B: Sat: 9:30-11:00am-6 wks-Begins 5/24/97
Course #: [00.504-012]
Tuition: \$50.00

- *Yoga II**

[00.568-011]
Summer I

Instructor: Lynn Simon
A continuing level class for students who are ready for more challenges, are comfortable with shoulder stand, sun salute and basic standing postures. Bring a mat, dress comfortably.
Thurs: 6:30-8:00pm-6 wks-Begins 5/22/97 - Tuition: \$50.00

- *Meditation**

[00.505-011]
Summer I

Instructor: Lynn Simon
Meditation, a natural tool for personal growth, helps us "let go" and regain control of the body and mind. Improve concentration, heighten creativity and awareness, and calm the body through the "relaxation response." Several forms of meditation are explored, so that students can design their own program.
Tues: 8:15-9:30pm-6 wks-Begins 5/20/97 - Tuition: \$40.00

- *Tai-Chi**

[see #'s below]
Summer I & II

Instructor: Rachel Robinson
Tai-Chi is the traditional Chinese form of exercise practiced early in the morning in parks all over China. You are left feeling alert, yet very relaxed with increased focus, harmony, balance and strength. The exercise is done very slowly and all ages can benefit.
Section A: Sat: 11:00am-12:30pm-6 wks-Begins 5/24/97
Course #: [00.552-011]
Section B: Sat: 11:00am-12:30pm-6 wks-Begins 7/12/97
Course #: [00.552-021]
Tuition: \$55.00

- Boating Skills & Seamanship**

[00.525-011]
Summer I

Instructors: Arnold & Elizabeth Greenhouse, U.S. Coast Guard Auxiliary
Designed for the beginning boater or the boater who wants to update his/her knowledge. Topics covered include boat construction and nomenclature, boat handling, safety, and legal requirements; navigation rules, aids to navigation, trailering, and marlinspike seamanship.
For additional information call (508) 458-7676.
Mon: 7:30-9:30pm-6 wks-Begins 5/19/97 - Tuition: \$45.00

- Wine Tasting Workshop – Connoisseur**

[00.540-011]
Summer I

Instructor: Charles Saunders
An introduction to the major wine regions, varieties and types. Tasting and serving techniques will be explored, along with the fundamentals and uses of wine. Approximately 25 wines will be tasted. An additional charge of \$25.00 to cover the cost of the wines is due at the first meeting. Students must be of legal drinking age.
Tues: 7:00-9:30pm-6 wks-Begins 5/20/97 - Tuition: \$50.00

- NEW! The Wines of France**

[00.544-021]
Summer II

Instructor: Charles Saunders
Experience the finest wines from 4 Regions of France; Beaujolais, Loire, Bordeaux and Burgundy. Please bring 2 glasses to class. An additional charge of \$35.00 to cover the cost of wines is due at the first meeting. Students must be of legal drinking age.
Wed: 7:00-9:30pm-4 wks-Begins 7/9/97 - Tuition: \$40.00

- Introduction to Magic**

[00.551-011]
Summer I

Instructor: Don Sanborn
This class will teach the student approximately 25 magical effects using sleight of hand with cards and coins, mental effects and self-working mysteries. The props used will be items commonly found in the home. Students will learn about magic ethics, societies, and recommended books. They should bring a deck of cards to the first lesson.
Thurs: 7:00-9:00pm-6 wks-Begins 5/22/97 - Tuition: \$60.00

FINANCE & REAL ESTATE

- The Early Bird Gets the Worm: College Funding for Parents of High School Students**

[00.604-021]
Summer II

Instructor: Bonnie Hepburn, CFP
Are you the parent of a high school freshman or sophomore? Did you know that your opportunities for college financial aid will be best if you act now, even though college is several years away? Here's the reason: Nearly all private colleges look back two years at parents' income and assets. In addition, the federal law governing financial aid, updated once every five years, was just modified this summer. Come to this workshop and learn how income and assets are counted and how to lower their impact on what you pay. Every attendee will receive a free appraisal of his/her potential for financial aid.
Sat: 9:00-11:00am-1 day-8/9/97 - Tuition: \$20.00

- Personal Financial Planning**

[00.601-011]
Summer I

Instructor: Chris Outchcunis
This course will cover a variety of personal money management topics including; building a financial plan, savings, insurance, tax-advantaged investments, real estate investments, stocks and bonds, personal budgeting, financing children's education, retirement planning and investing in an IRA/Keogh.
Wed: 7:00-9:30pm-5 wks-Begins 5/21/97 - Tuition: \$40.00

CAREERS

- Focus on Career Alternatives**

[00.408-011]
Summer I

Instructor: Judiit Price
Develop satisfying career alternatives based upon your interests, skills, and values. Self assessment, testing, interviewing skills, resume writing and creative job search techniques will be explored. Tests will include the Myers Briggs Type indicator, John Holland Self-Directed Search, Harrington O'Shea and others.
Sat: 9:00am-2:00pm-2 days-Begins 5/31/97 - Tuition: \$55.00

- Assertive Presentation Skills**

[00.452-011]
Summer I

Instructor: David Favreau, M. Ed., L.C.S.W.
Assertive Presentation Skills will help you to develop and deliver effective assertive presentations. Class time will address presentation preparation, assertive presentation styles, dealing with hostile audiences and your fears. Weekly homework assignments. Note: This class can be used for CEU's/P.D. Points for Educators.
Mon: 5:30-7:30pm-5 wks-Begins 5/19/97 - Tuition: \$35.00

- Assertiveness Training for Teachers**

[00.415-011]
Summer I

Instructor: David Favreau M.Ed., L.C.S.W.
This workshop is a skill building program for educators who would like to improve their classroom presentation skills, pro-active problem solving, and limit setting and building a support network. Certificate of completion is given at the end of 5 weeks. This class can be used for CEU's/P.D. points for educators.
Wed: 5:30-7:30pm-5 wks-Begins 5/21/97 - Tuition \$35.00

SKILL ENHANCEMENT & REFRESHER

- NEW! Law for the Non-Lawyer: Buying a House**

[00.731-011]
Summer I

Instructor: Robert R. Andrew
What the Real Estate Broker didn't tell you and you forgot to ask! A step-by-step walk through the process of buying a house from the signing of the Offer to Purchase through the Closing (and problems that may arise following the Closing).
Tues: 6:00-8:30pm-1 day-5/20/97- Tuition: \$40.00

- NEW! Law for the Non-Lawyer: Making a Will and Probating an Estate**

[00.732-011]
Summer I

Instructor: Robert R. Andrew, Esq.
Topics will include: "Do you need a will?"; Requirements for making a will; What to include in a will; Wisdom of "Do it Yourself Will Kits"; Changing a will; Dying without a Will; Waiver of wills; What to do when someone dies; How to probate an estate; How to transfer property to beneficiaries and heirs; Filing an Estate Tax Return.
Tues: 6:00-8:30-1 day-Begins 6/3/97 - Tuition: \$40.00

- NEW! Law for the Non-Lawyer: Landlord and Tenant Law**

[00.733-011]
Summer I

Instructor: Robert R. Andrew, Esq.
Topics will include: Tenancies at will; Periodic tenancies; Other types of leases; Responsibilities of the Landlord; Responsibilities of the Tenant(s); Requirements for the security deposit; Quite enjoyment of the apartment; Repairs to be made; Liability of the Landlord and/or Tenant; Notices to quit and eviction; Breaking a lease.
Tues: 6:00-8:30pm-1 day-Begins 6/17/97- Tuition: \$40.00

- GMAT Test Preparation**

[00.726-011]
Summer I

Instructor: TBA
A review of subject matter, test-taking strategies, and problem solving. Students will answer sample questions and take a sample test.
Sat: 9:30am-2:30pm-4 wks-Begins 5/24/97 - Tuition: \$90.00

NOTICE

We are no longer accepting applications into the following degree and certificate programs:

- Associate Degrees:**

Applied Chemistry
Applied Chemistry: Biotechnology Option
Applied Chemistry: Hazardous Waste Option
Applied Mathematics
Applied Mathematics: Computer Mathematics Option
Banking
Criminal Justice
- Bachelor's Degrees:**

Applied Chemistry
Applied Chemistry: Coatings Option
- Certificate Programs:**

Engineering Skills
International Trade
Novell Option of Data Telecommunications
- A student enrolled in any of these programs should schedule an appointment with the appropriate Program Advisor to help plan a schedule for degree or certificate completion.

PROFESSIONAL INSTITUTES



ENTREPRENEURSHIP INSTITUTE

Weekend Seminars!

If you have always wanted to start your own consulting firm, import/export firm, mail-order business or any self-supporting venture — now is the time to prepare yourself for the future.

Most of these workshops include a Harvard Business School Case Study (HBS). Others include extensive hand-outs. All of the seminars in the Entrepreneurship Institute are co-sponsored by the United States Small Business Administration.

For further information on these workshops, please call Cathy Kendrick at (508) 934-2495. To register for the workshops, call the Office of Enrollment Services at (508) 934-2700. All of the seminars are held at the Executive Conference Center in the historic Patrick Mogan Building in downtown Lowell.

*Entrepreneurship: Starting and Succeeding in Any Type of Business [see #'s below] Summer I & II

Instructor: Mel Epstein, President and founder of Business Strategies, a consulting firm in Cambridge, MA which assists individuals and companies in implementing successful business plans.

This seminar is for the person who is considering starting his or her own business. It covers the four key elements of a strategy for becoming a successful entrepreneur: choosing the business that is right for you, organizing, financing, and marketing. Includes answering legal and tax questions, record keeping, raising money, preparing a business plan, marketing, motivation, and selling. (HBS)
Section A: Sat, 10:00 am-6:00 pm-1 day-5/17/97
Course #: [00.001-011]-Tuition: \$79.00
Section B: Sun, 10:00 am-6 pm-1 day-7/13/97
Course #: [00.001-021]-Tuition: \$79.00

*Starting Your Own Import-Export Business [see #'s below] Summer I & II

Instructor: Mel Epstein

This seminar covers how to develop a complete import-export strategy: selecting products, identifying distributors, arranging transportation and payments, satisfying U.S. Customs requirements, and meeting export regulations. Includes how to locate overseas suppliers and buyers, and how to develop strategy that will work for you. Each participant will receive a 100-page pamphlet and Harvard Business School Case Study. (HBS)
Section A: Sun, 10:00 am-6:00 pm-1 day-5/18/97
Course #: [00.002-011]-Tuition: \$79.00
Section B: Sat, 10:00 am-6:00 pm-1 day-7/12/97
Course #: [00.002-021]-Tuition: \$79.00

*Starting Your Own Consulting Practice [00.004-011] Summer I

Instructor: Mel Epstein

For those in any field interested in starting and succeeding in consulting. Covers the three key elements of success in consulting: organizing, financing, and marketing. Topics include: identifying potential clients, advertising, sales presentations, pricing your services, closing a sale, translating your expertise into advice, writing successful proposals, and estimating time required to complete a project.
Sat: 10:00 am-6 pm-1 day-5/24/97-Tuition: \$79.00

*Starting your Own Mail Order Business [00.005-011] Summer I

Instructor: Mel Epstein

Learn the basics of succeeding in the mail order business by following the six key steps: developing your mail order concept, selecting merchandise, preparing an ad or catalog, renting mailing lists, and monitoring results. Includes a Harvard Business School case study, and a video of L.L. Bean's methods for managing a mail order business. Learn how to begin with a classified ad, how to estimate your response rate, and how to use a financial feasibility formula for a mail-order venture. (HBS)
Sun: 10:00 am-6:00 pm-1 day-5/31/97-Tuition: \$79.00

*Starting & Succeeding in the Catering and Restaurant Business [00.008-011] Summer I

Instructor: Mel Epstein

Opportunities abound for the catering and restaurant entrepreneur with a well-prepared business plan (more than 40% of the food dollar is consumed outside the home). This seminar covers preparing a complete business plan for a successful catering and restaurant business. Defining Your Food Service Concept, Organizing, Financing and Marketing. We will show you how to advertise, plan menus, analyze costs to increase profits, determine the best location, raise money and motivate your staff. Includes extensive handouts illustrating successful catering and restaurant management practices. (HBS)
Sun: 10:00 am-6:00 pm-1 day-5/25/97-Tuition: \$79.00

NEW! *Guerrilla Marketing & Selling [00.037-011] Summer I

Instructor: Mel Epstein

Guerrilla marketing and selling places great emphasis on strategic thinking and innovative methods to increase sales using little or no money. We will cover how to conduct your own strategic marketing and selling analysis and how to use guerrilla techniques that will work for you and your company. The seminar will include positioning, competitive analysis, niche strategies, creating special events, writing news releases and publicity materials, making presentation, client-centered selling and closing sales. For people in all product and service enterprises.
Sun: 10:00 am-6 pm-1 day-6/1/97-Tuition: \$79.00



MANAGEMENT INSTITUTE

NEW! *Finance for Non-Financial Managers [00.034-011] Summer I

Instructor: Mel Epstein

For people in all fields who want to understand the essentials of finance and how to use finance successfully in their work. Covers the income statement, the cash flow statement, the balance sheet, the five types of financial ratios, budgeting and break-even analysis, the time value of money, making projections, raising venture capital and preparing a business plan. Includes Harvard Business School Case Studies. (HBS)
Thurs: 9:00 am—5:00 pm—1 day—6/12/97-Tuition: \$99.00

NEW! *Marketing Management: Concepts & Strategies [00.010-011] Summer I

Instructor: Mel Epstein

This seminar will cover the complete process of marketing: What markets to serve?; With what products?; Through what channels of distribution?; At what prices?; Using what brand name?; Employing what communications media?; Toward what corporate purpose? Special topics to be covered include: Writing a Marketing Plan; Techniques For Effective Implementation of Your Marketing Plan; New Product Introduction Strategies; Marketing Services; "Niche" Marketing, Collaborative Marketing, The Product Life Cycle, Penetration versus Skimming Pricing Strategies; The Marketing Mix; Sales Management; and Push versus Pull Strategies. We will also cover six types of marketing analysis: Market Demand Analysis, Consumer Analysis, Competitive Analysis, Trade Analysis, Economic Analysis, and Innovation Analysis. Each seminar participant will receive a specially selected collection of Harvard and Stanford Business School Case Studies. (HBS)
Thurs: 9:00 am-5:00 pm—1 day—6/26/97—Tuition: \$99.00

*Managing & Supervising for Results [00.017-011] Summer I

Instructor: Mel Epstein

No matter what level of experience you have as a manager, there are four key elements of effective management you can employ: Planning, Organizing, Leading and Monitoring. We will cover the three key elements of successful supervision: division of work, delegation, and coordination. Includes how to communicate effectively, monitor without meddling, transcend the paradox of systems versus spirit, use

the three step action plan to get work completed on time, motivate & compensate. Using a series of video and Harvard Business School case(s), we will illustrate the management & supervision methods you can use to succeed. (HBS)
Thurs: 9:00 am-5:00 pm—1 day—6/19/97—Tuition: \$99.00



MULTIMEDIA INSTITUTE

For more information on these workshops, call Cathy Kendrick at (508) 934-2495.

*Introduction to Macintosh Basics [00.902-011] Summer I

Instructor: Angela Harkins, Computer Training Consultant

Provides students with an introduction to the Macintosh. Using the keyboard & mouse, drop-down and pop-up menus, creating and naming new files/folders, saving documents, using the trash can, memory specifications and requirements, desk accessories, and some keyboard short-cuts. (A requirement for all Multimedia students who do not have basic familiarity with the Macintosh)
Sat: 10:00 am-5:00pm-1 day-5/17/97-Tuition: \$70.00

NEW! *Intro to QuarkXPress 3.32 [00.975-021] Summer II

Instructor: Darryl Benjamin

An intensive hands-on course for beginners. Learn how to combine text and graphics in this popular page layout application. Students will learn how create new documents, manipulate text and images, import both text and graphics, apply different style attributes to their text, and more! Note: Students should have basic familiarity with the Macintosh.
Mon-Thurs: 7:00-9:30pm-4 eves-Meets August 18, 19, 20, and 21-Tuition: \$185.00

*Introduction to Adobe Photoshop [00.932-021] Summer II

Instructor: TBA

Gain a basic knowledge of Adobe Photoshop, one of the most versatile imaging software applications on the market. Students should have basic, hands-on familiarity with the Macintosh.
Mon-Thurs: 7:00pm-9:30pm-4 eves-Meets August 18, 19, 20, and 21-Tuition: \$185.00

NEW! *Logos, Business Cards, and Letterheads: Creating a Professional Image for Yourself [00.976-021] Summer I

Instructor: Anne Katzeff

Join us for this full-day workshop on logos, letterheads, and business cards. Under the instruction and guidance of a seasoned designer, students will have the opportunity to create an identity system for themselves. Students should bring with them a pad of tracing paper, pencils, erasers, and any initial concepts. In the first part of the class, students will learn about design approaches, styles, and conceptualization. In the second part of the class, students will sketch out their ideas and attempt to render them using the Macintosh computer as a design tool. Basic Mac or Windows computer familiarity required.
Sat: 9:00am-5:00pm-1 day-6/28/97-Tuition: \$95.00

UMass Lowell offers one of the largest and most comprehensive programs of study in multimedia applications

- State-of-the-art Multimedia Labs
- Courses available on both Mac and PC platforms



In addition to the noncredit Multimedia Institute courses, the University also offers a credit certificate program in Multimedia Computer Applications. For further information, see the Certificate Program section of this bulletin on page 20 or call 508-934-2942.

PROFESSIONAL INSTITUTES



INTERNET
INSTITUTE

The following courses are co-sponsored with On Tour Multimedia Consultants, an Internet software and services company that specializes in creating database-driven Internet solutions for an array of industries and markets including manufacturing, printing, publishing, and advertising.

NEW! *The Internet as a Strategic Corporate Weapon [00.981-011] Summer I

Instructor: On tour Multimedia Consultants

The technologies of the Internet are gaining rapid acceptance as dynamic tools for electronic commerce and communications. Many enterprises are devising and applying innovative Internet based applications for both internal and external use to reduce overall operating costs, improve communications and workflow, open new business opportunities, increase customer satisfaction, and generate revenue. This seminar will identify and demonstrate unique Internet business applications, including intranets and extranets, It will also focus on the strategic planning issues to create, implement, and measure an Internet program that supports mission-ethical business functions. Lunch is included.

Thurs: 9:00am-4:00pm-1 day-5/15/97-Tuition: \$225.00

NEW! *How to Create a Winning Web Site [00.978-011] Summer I

Instructor: On Tour Multimedia Consultants

What makes a web site a winner? It takes a lot more than just a pretty face to attract an audience, so perhaps your web site budget should be reviewed and reallocated. This seminar will look at web site do's and don't's from a different angle. It will investigate the technologies, dynamics, look, and feel of web sites that attract, excite, and make customers come back for more. This session will also discuss web site interactivity and how to manage dynamic, robust web sites. The pros and cons of some of the latest web development tools will also be presented. Attendees will be given the opportunity to confirm or deny the strength and functionality whether their corporate site satisfies the "winning criteria". You will also get an answer to the question, "What next?". Lunch is included.

Thurs: 9:00am-4:00pm-1 day-5/22/97 - Tuition: \$125.00

NEW! *The Internet & World Wide Web: Debunking the Hype [00.977-011] Summer I

Instructor: On Tour Multimedia Consultants

The Internet and The World Wide Web have become synonymous with marketing and advertising within the business-to-business sales community. Thousands of companies have discovered the strengths and weaknesses that the Internet offers. This seminar will identify the good, the bad, and the ugly that the World Wide Web serves up. It will also provide a brief history and retrospective of the Internet and it's various technologies and capabilities, including the World Wide Web, intra/extranets, electronic mail, popular search engines, informational directories, cybermalls, and more. Lunch is included.

Thurs: 9:00am-4:00pm-1 day-5/29/97 - Tuition: \$125.00

NEW! *Hardware/Software/Telecommunications [00.980-001] Summer I

Instructor: On Tour Multimedia Consultants

This seminar will address the key hardware, software, and telecommunications issues that face companies as they engage the technologies of the Internet. Business and information technology professionals are faced with a myriad of issues, choices, and decisions prior to the successful implementation of an Internet solution. This session will review and evaluate the pros and cons for a variety of hardware, software, operating system, networking, and database platforms and systems. Internet connection options for businesses will also be presented, including types, costs, benefits, risks, etc. Lunch is included.

Thurs: 9:00am-4:00pm-1 day-6/5/97-Tuition: \$150.00

NEW! *Beyond Surfing: Strategic Business Use of the Internet [00.979-011] Summer I

Instructor: On Tour Multimedia Consultants

This seminar will address the key issues facing companies before, during, and after implementation of the Internet as part of their business process. More and more companies are realizing the strategic advantages of using the Internet in various parts of their business. In many cases, companies are being forced to accept and use the Internet not only because their vendors, suppliers, partners, customers, and prospects are insisting upon it, but also because their competitors are using it to gain a competitive advantage. Lunch is included.

Tues: 9:00am-4:00pm-1 day-6/10/97 - Tuition: \$125.00

NEW! *Setting up and Running WWW Servers [00.951-011] Summer I

Instructor: TBA

Lecture, discussion, extensive hands-on. Platforms: Mac/Windows. This course teaches basic skills needed by the system administrator to set up and manage a World Wide Web site. The introductory course also includes information about news groups, FTP, Gopher, etc. The course includes information on server software for UNIX, Mac, and Windows environments, FTP, Gopher, news, email, obtaining and compiling WWW server software and security issues: fire walls, etc. Lunch is included.

Tues.-Thurs: 9:00am-5:00pm-3 days-6/ 24,25,26-Tuition: \$600.00

***Creating Interactive Web Pages with Macromedia Director's Shockwave** [00.948-011] Summer I

Instructor: Beatrice Lee

Lecture/discussion, extensive hands-on. Platforms-PC. Macromedia Director developers can now create interactive web pages using a Director plug-in called Shockwave. Shockwave allows users to create interactive advertising promotions, entertainment, and compelling user environments. Shockwave can transform Web Pages into dynamic, interactive multimedia productions that load as quickly as static images. This introductory course will go over the basics of Director and show how applets can be made using Shockwave. Students will have an opportunity to create their own shocked web pages. If there is media you would like to incorporate into your presentation, please plan on bringing it to class with you. Lunch is included.

Tues-Thurs: 9:00am-4:00pm-3 days-6/17,18,19-Tuition: \$400.00

NEW! *Create Your Own Web Pages With Adobe PageMill [00.972-021] Summer II

Instructor: Darryl Benjamin

Learn how to construct your own web site using one of the hottest web page software packages! No need to bother with HTML - let the application do it for you! Using PageMill students will have the opportunity to create stunning web layouts with tables, frames, and graphics under the supervision of a professional designer. Topics such as what makes a web page attractive and PageMill's capabilities in comparison to other web page software will be covered. Students should have basic Macintosh or Windows and Internet familiarity - class will be taught on Macintosh computers.

Sat: 9:00am-5:00pm-1 day-8/16/97 - Tuition: \$140.00

NEW! *Beginning HTML [00.982-011] Summer I

Instructor: Kelley Homsey

Hypertext Markup Language (HTML) is the heart of the World Wide Web as it is the language used to create the sites. In this class, students will master the basic skills necessary to create their own home pages. Topics covered will include: Creating a Home Page, Creating a Book Mark Page, Inserting Main Graphics and Links to Other Web Sites, and Inserting a Navigation Bar.

Mon: 7:00pm-9:00pm-3 eves-5/12,13,14 - Tuition: \$185.00

NEW! *Introduction to Web Publishing with Microsoft® FrontPage 1.1 [00.973-021] Summer II

Instructor: Kelley Homsey

FrontPage contains essential tools to maintain and create your Web site. You will learn to design Web documents without learning HTML code by using the FrontPage Editor. Topics will include: Creating a Web document, Applying Styles and Formats to Text, Inserting an image from the Web, and Creating a link to a Multimedia File. Microsoft's® Internet Explorer 3.0 will be used to view the Web pages. Students should have basic Windows and Internet familiarity. Held at C Drive in Salem, New Hampshire.

Thurs: 9:00am-5:00pm-1 day-7/10/97-Tuition: \$250.00

NEW! *Creating Animated GIFs for Your Web Site [00.974-021] Summer II

Instructor: Darryl Benjamin

Learn how to create cool animated graphics for the World Wide Web - without having to know Java or CGI! Using Photoshop and GIF Construction Set, students will have the opportunity to create their own animated GIF files and save them for use on their own web sites. Participants should have some familiarity with the World Wide Web and Windows.

Sat: 9:00am-5:00pm-1 day-8/23/97 - Tuition: \$125.00



PC USER
INSTITUTE

Learn to use some of the most popular software application programs to help you become more productive in your job, or to assist you with your personal computing needs. Taught by experienced professionals, these courses are offered on IBM® PC compatible computer systems. Certificates are available upon recommendation of the instructor. For further information about the PC User Institute, please contact Cathy Kendrick at 934-2495. Since class size is limited, early registration is encouraged.

***Intro to Personal Computers Using IBM PC Compatible** [00.906-021] Summer II

Instructor: Computer Training Consultant

Designed for those who have purchased or are considering purchasing a personal computer, or those who anticipate having to work with one. Topics will include what a personal computer can do, the memory unit, keyboard and operating system. A variety of software programs for word processing, spreadsheets, and database management will be discussed. No experience necessary.

Mon-Thurs: 7:00-9:00pm-4 days-8/19,20,21-Tuition: \$95.00

NEW! *Introduction to Windows 95® [00.956-011] Summer II

Instructor: Computer Training Consultant

Designed for the user who is new to Windows and wants to become familiar with Windows 95, this course will cover everything from using the mouse, opening and closing windows, starting multiple programs, switching between them, and quitting them, to customizing your screen and mouse settings, working with drives, folders and files, copying, deleting and recycling files, and printing files.

Tues: 9:00am-4:00pm-1 day-6/3/97 - Tuition: \$125.00

Introduction to Microsoft® Exchange [00.983-021] Summer II

Instructor: Computer Training Consultant

This course, as designed for an Exchange new user, will introduce the full range functions of Exchange. This course will include working with messages and the Exchange viewer, using the address book, mailbox and inbox, and working with folders. Topics covered will include: Starting and Understanding the Microsoft® Viewer Exchange, Creating Distribution Lists, Sending Mail through Microsoft® Office, Working with Public Folders, and Allowing another User Access to your Mailbox. Working knowledge of Windows is required. Held at C Drive in Salem, New Hampshire.

Wed: 9:00am-1:00pm-1 day-7/9/97 - Tuition: \$125.00

PROFESSIONAL INSTITUTES

***Microsoft® Word** [00.959-011]
Instructor: Computer Training Consultant Summer I
 This introductory course will acquaint the new user with creating Windows documents. Upon completion of the training, you will be able to create, edit, save, and print documents. In addition, you will also learn how to create envelopes, cut and paste text, add headers and footers, and use the spell checker and thesaurus. Prerequisite: Intro to Windows or equivalent.
 Mon: 9:00am-4:00pm-1 day-6/9/97 - Tuition: \$125.00

***Microsoft® Excel** [00.958-011]
Instructor: Computer Training Consultant Summer I
 This course will acquaint you with Excel for Windows. Upon completion of the training, you will be able to create, save, and print worksheets. You will also learn how to enter simple formulas, cut and paste data, and much more. Topics will include: worksheet design, edit fill and auto fill, erasing a range, saving your file, adjusting column widths, aligning data, setting numeric formats, and relative/absolute cell addressing. Prerequisite: Intro to Windows or equivalent skills.
 Mon: 9:00-4:00pm-1 day-6/16/97 - Tuition: \$125.00

***Introduction to Access for Windows** [00.960-011]
Instructor: Rachel T. Antifonario, Computer Training Consultant Summer I
 This course is designed to familiarize you with Access for Windows. Upon completion of this training, you will be able to create, save, and print Access tables. In addition, you will be able to add records, query the database, delete records, and design a simple report. Prerequisite: Intro to Windows or equivalent.
 Wed: 9:00-4:00pm-1 Day-6/11/97 - Tuition: \$125.00

***Windows NT Overview- 1/2 Day Seminar** [00.964-021]
Instructor: Computer Training Consultants Summer I
 This half-day seminar will provide an overview of Windows NT, why it was developed, hardware requirements, design goals, system components, etc. Covers the Windows NT server, Novell Netware, Windows for workgroups, protocols, and remote access services. Held at C Drive in Salem, NH
 Tues: 9:00am-12 noon-6/10/97-Tuition: \$125.00

HEALTH CARE INSTITUTE

The Health Professions Institute helps health professionals update their clinical skills and stay current with the industry. The noncredit courses below (with contact hours) are taught by the College of Health Professions faculty and other expert clinicians in various health care disciplines. Participants in these workshops may receive CEU credit.

For more information, call the Office of Special Programs at (508) 934-2405. To register, call the Office of Enrollment Services at (508) 934-2700.

NEW! Therapeutic Touch: Intermediate Level [00.575-011]
Instructor: Katherine Rosa MSN RN CS FNP Summer II
 This workshop is designed to deepen and expand the beginning healer's practice base. During these six hours, we will explore the meditative aspects of Therapeutic Touch, increase your understanding of energy modulation in the treatment phase, and discuss the process of becoming a healer. Students are advised to wear comfortable clothing and to bring a notebook/journal. Participants must have completed a Beginning Level TT workshop in the Krieger/Kunz method and have practiced at least once a week for one year or more. Please bring documentation of previous course to class. Enrollment is limited to 15.
 Sat: 9:00am-4:00pm-1 day-6/7/97 -Tuition: \$60.00

NEW! Improving Vision [00.576-011]
Instructor: Roger McLeod, Ph.D Summer I
 This short course extends the Bates eye exercise method for improving vision so that dependence on ever increasing prescriptions for reading or distance vision can be reversed. It will particularly provide some of the concepts understandable by elementary mathematics. It proposes that appropriate exercises can reverse prior vision problems like those which currently have been destroying the previously perfect vision of some youthful candidates for military flight training, or for those who have work-induced visual problems, may be avoidable. The method requires motivation to follow the appropriate treatment strategy of eye exercises. Enrollment limited to 12. A brief phone interview is required. Call (508) 453-2803.
 Wed: 6:30pm-9:00 pm-6 wks-Begins 5/22/97- Tuition: \$95.00

NEW! Food-Borne Diseases [00.577-011]
Instructor: Jacob Lam, Ph.D Summer I
 This workshop/seminar is designed for persons who handle food at home and/or in food establishments. Microbiology of food-borne diseases will be described and discussed. Transmission, prevention, and treatment of food-borne diseases will be emphasized. In addition, a new generation of food-borne pathogens such as *Campylobacter jejuni* and *Enterohemorrhagic Escherichia coli* 0157:H7 and others will be discussed.
 Mon: 7:00pm-10:00pm-1 day-6/2/97 -Tuition: \$40.00

NEW! Application of Chinese Herbal Therapy [00.578-011]
Instructor: Richard Tao, Ph.D Summer I
 Herbal therapy is one kind of traditional Chinese medicine, with a history of more than 2,000 years. This two hour discussion will introduce the basic theory of Chinese herbal therapy and offer updated information on research being done in this field, as well as clinical application, especially in the anti-infection area.
 Thurs: 6:00pm-8:00pm-1 day-6/12/97 -Tuition: \$30.00

NEW! Cholesterol: Know Your Numbers and What to do About Them [00.579-011]
Instructor: Robert Nicolosi, Ph.D Summer I
 Genetics and environment play critical roles in the development of arteriosclerosis. By identifying environmental risks, life style changes can be initiated to improve health. Such approaches may include the reduction of dietary fats. This workshop will review the role of dietary fat and cholesterol in the body, and the current interventions recommended regarding the prevention and treatment of hypercholesterolemia and cardiovascular disease.
 Wed: 9:00am-12pm-1day-6/25/97 -Tuition: \$40.00

NEW! Managing Your Back Pain [00.580-011]
Instructor: Connie Seymour, Reg P.T. Summer I
 An overview of the basic anatomy and physiology of the back and common causes of back pain will be discussed in this workshop. Additionally, body mechanics, postural realignment, and functional exercises will be demonstrated by the instructor and practiced by the participants. All participants are asked to wear comfortable clothing.
 Thurs: 6:00-9:00pm-1 day-6/5/97-Tuition: \$40.00

NEW! Infectious Diseases Update [00.581-011]
Instructor: Sandra Richardson, Ph.D Summer I
 Overview of bacterial, viral, protozoan, and fungal disease which are currently on the rise will be covered, emphasizing the significance of drug resistance and the global threat of infectious disease. Epidemiology, etiology, diagnosis and treatment will be explained.
 Thurs: 7:00pm-10:00pm-1 day-6/19/97-Tuition: \$40.00

NEW! Older Women's Health Care Needs: The Role of the Advanced Practice Nurse in Gynecological Health [00.583-011]
Instructor: Hollie Noveletsky, Ph.D, RN, CS Summer I
 This seminar is designed to provide Nurse Practitioners from a variety of settings and representing various specialties with an up-to-date review of research-based practice guidelines for commonly-occurring older women's gynecological health care issues. Lunch is from 12:00-1:00 pm and is not provided.
 Mon: 9:30am-3:00pm-1 day-6/9/97-Tuition: \$40.00

EDUCATION INSTITUTE

The Education Reform Act of 1993 requires that all educators in the state of Massachusetts be recertified by 1999. In an effort to help teachers meet new certification requirements, the University of Massachusetts Lowell College of Education and Continuing Education are offering a variety of noncredit workshops that can be applied towards teacher recertification.

For further information or to register for these workshops, call the Office of Special Programs at (508) 934-2405.

An Introduction to Understanding, Surfing, and Publishing on the Internet [00.979-021]
Instructor: Mike Lucas Summer I
 The Internet and its vast resources will be explored and explained. Participants will learn about Internet service providers, different types of access, and what hardware and software are needed to connect. E-mail, Chat, Newsgroups, and the World Wide Web are some of the Internet applications students will explore in a hands-on environment. Internet searching tools, strategies, and engines will be examined. Participants will produce their own "Home Pages" and will become familiar with terms such as: HTML, HTTP, URL, GUI, WYSIWYG, TCP IP and PPP. Some Macintosh or computer experience required.
 Mon: 5:00pm-8:00pm-6 wks-Begins 5/19/97- Meets May 19, June 2, 9, 16, 23, and 30-Tuition: \$125.00

Plastics Seminars and Workshops for Industry

Bi-weekly June through August, 1997

Offered throughout the year, UMass Lowell's Plastics Seminars and Workshops are highly respected throughout the plastics industry as a proven method of gaining both theoretical and practical information. In its sixteenth year and staffed by internationally respected experts, this program provides effective technical instruction applicable to plastics materials, processes, design, and quality control. Seminar offerings cover topics in such areas as Injection Molding, CAD/CAM, Blow Molding, Extrusion, Quality, Fundamentals, and more.

Contact the Special Programs Office for information and brochure at (508) 934-2405.

UMass Lowell Certificate Programs

TRAINING FOR HIGH DEMAND CAREERS

Computer Assisted Manufacutring

Required Courses:

- 23.200 CADr (Computer Aided Drafting)
- 23.480 CADes (Computer Aided Design)
- 23.481 Applied CAD Design
- 23.419 Applied Computer Aided Manufacturing (CAM)

Electives (choose 3):

- 23.101 Engineering Graphics I
- 23.102 Engineering Graphics II
- 23.301 Manufacturing Technology Laboratory
- 23.305 Manufacturing Processes OR
- 23.306 Electronic Manufacturing Technology
- 23.430 Industrial Automation
- 23.474 Design for Manufacture

Computer Proficiency

Required Courses:

- 92.202 Microcomputers & Applications Software*
- 92.211 Introduction to Programming with C - Part I (or 92.267 C Programming***)

Electives (choose 3):**

- 90.230 Introduction to Multimedia
- 92.212 Introduction to Programming with C - Part II
- 92.219 BASIC Programming
- 92.263 FORTRAN Programming
- 92.265 Pascal Programming
- 92.267 C Programming
- 92.268 C++ Programming
- 92.269 Advanced C++
- 92.311 Introduction to the UNIX Operating System
- 92.312 UNIX Shell Programming
- 92.321 Discrete Structures I
- 92.360 Introduction to Data Structures/C
- 92.363 SPSS-X (Introduction to Data Analysis)
- 92.364 Problem Solving with C
- 92.470 Data/Telecommunications
- 92.474 Data Base Concepts

* Students with spreadsheet and database experience on Mac's or PC's can replace 92.202 with any of the elective courses listed above.

**Note: This is a partial list of computer elective courses. For the complete list of courses that may be applied as electives to this program, see the Continuing Education Undergraduate Course Catalog for computer math courses with the 90. or 92. prefix, or contact the Office of Enrollment Services at (508) 934-2480.

***Students may not receive credit for both 92.211 and 92.267.

Computer Science

Satisfied by

- 1) C or C++ Programming through Data Structures 91.250, 92.267, 92.360 or previous background
- 2) Discrete Mathematics Statistics 91.500 or 92.321, 92.322 or previous background
- 3) Calculus 92.131, 92.132 or previous background
- 4) Algorithms 91.404 or previous background
- 5) Languages 91.301 or previous background
- 6) Computer Architecture 91.305 Computer Architecture or previous background
- 7) Operating Systems 91.308 or previous background

Computer Engineering Technology

Required Courses:

- 17.347 Logic Design B
- 17.348 Logic Design C and Laboratory
- 17.353 Digital Electronics
- 17.383 Microprocessors A
- 17.384 Microprocessors B
- 92.267 "C" Programming
- 92.268 C++ Programming

Data Telecommunications

Required Courses:

- 92.267 C Programming
- 92.311 Introduction to the UNIX Operating System
- 92.470 Data/Telecommunications
- 92.472 Local Area Networks
- 92.473 Computer Network Architecture and Protocol
- 92.475 Communication Network Management

Electronics Technology

Required Courses:

- 17.213 Electric Circuits
- 17.214 Circuits & Laboratory I
- 17.215 Circuits & Laboratory II
- 17.216 Advanced Circuits
- 17.346 Logic Design A
- 17.355 Electronics & Laboratory I
- 17.356 Electronics & Laboratory II
- 17.357 Electronics & Laboratory III
- 17.358 Electronics & Laboratory IV

Environmental Technology

Required Courses:

- 15.340 Hazardous Waste Management
- 15.378 Air Quality Management
- 15.420 Solid Waste Management
- 86.131 Environmental Chemistry I OR 84.121 Chemistry I
- 86.132 Environmental Chemistry II OR 84.122 Chemistry II

Electives (choose 2):

- 15.280 Industrial Waste Treatment
- 15.356 Water Treatment
- 15.358 Wastewater Treatment
- 15.388 Pumps & Compressors
- 17.130 Electrical Basics and Laboratory
- 41.367 Environmental Law and Regulations
- OSHA "Hawzopper"
- 87.403 GIS in Environmental Studies

Graphic Design and Digital Imaging

Required Courses:

- 70.291 Introduction to Graphic Design
 - 70.240 Fundamentals of Typography
 - 70.245 Desktop Publishing: Layout & Production
 - 70.262 Digital Imaging & Photography
 - 70.264 Computer Graphics & Illustration
 - 70.391 Advanced Graphic Design
 - 70.400 Portfolio Production Seminar
- #### Electives (choose 3):
- 70.392 Design for Advertising
 - 70.393 Corporate Identity Design
 - 70.394 Point-of-Purchase Design & Packaging
 - 70.376 Computer Animation: 2D & 3D
 - 70.377 Advanced Animation: AfterEffects
 - 90.230 Introduction to Multimedia
 - 90.231 Graphic Design for Multimedia
 - 90.238 Designing Multimedia for the World Wide Web

Hazardous Waste Management

Required Courses:

- 86.131 Environmental Chemistry I
 - 15.280 Industrial Waste Treatment
 - 15.340 Hazardous Waste Management
 - 15.396 Groundwater Resources
 - 41.367 Environmental Law & Regulations
- #### Electives (choose 3):
- 40-Hour OSHA "Hawzopper" Training
 - 86.132 Environmental Chemistry II
 - 15.388 Pumps & Compressors
 - 15.420 Solid Waste Management
 - 15.492 Water/Wastewater Plant Management

Internet System Administration

Required Courses:

- 91.271 TCP/IP Programming
- 91.371 Internet Systems Administration
- 91.372 Managing Internet Information Systems
- 92.311 Introduction to the UNIX Operating System

Electives (choose 2):

- 91.373 HTML Development and CGI Programming
- 91.470 Topics on the Internet
- 91.471 Internet Practicum/Internship
- 91.472 Security Issues on the Internet

Land Surveying

Required Courses:

- 15.123 Surveying I
- 15.124 Surveying II
- 15.262 Legal Aspects of Land Surveying
- 15.299 Surveying III
- 92.115 College Trigonometry

Electives (choose 2):

- 15.113 CAD
- 15.257 Highway Elements
- 15.264 Fundamentals of Land Development
- 23.101 Engineering Graphics I
- 41.367 Environmental Law and Regulations
- 41.370 Real Estate Law

Manufacturing Technology

Required Courses:

- 23.200 CADr (Computer Aided Drafting)
- 23.305 Manufacturing Processes (or 23.306 Electronics Manufacturing Technology)
- Statistical Quality Control
- 23.416 Applied Computer-Aided Manufacturing (CAM)

Electives (choose 3):

- 23.262 Engineering Data Analysis
- 23.301 Manufacturing Technology Laboratory
- 23.310 Industrial Safety
- 23.314 Manufacturing Productivity (Total Quality in Manufacturing)
- 23.402 Engineering Measurement Laboratory
- 23.427 Plant Layout and Materials Handling
- 23.474 Design for Manufacture
- 23.480 CADes (Computer Aided Design)

Multimedia Applications

Required Courses:

- 90.230 Introduction to Multimedia
 - 90.231 Graphics for Multimedia
 - 90.232 Desktop Video Production
 - 90.233 Multimedia Authoring Software
 - 90.234 Designing & Developing Interactive Media
- #### Electives (choose 2):
- 42.221 Writing for Interactive Media
 - 70.262 Digital Imaging & Photography
 - 70.264 Computer Graphics & Illustration
 - 70.291 Introduction to Graphic Design
 - 70.376 Computer Animation: 2D & 3D
 - 90.235 Programming for Multimedia

- 90.236 Instructional Design for Multimedia
- 90.237 Topics in Multimedia
- 90.238 Designing Multimedia for the World Wide Web
- 90.239 Multimedia Scripting Using Macromedia Director's Lingo
- 91.113 Exploring the Internet

Nutrition

Required Courses

(select four of the five below):

- 30.206 Human Nutrition OR
- 83.123 Nutrition and Disease
- 36.494 Directed Research in Nutrition
- 36.406/36.506 Biochemistry of Lipids
- 36.463/36.563 Nutritional Biochemistry

Electives:

- 30.206 Human Nutrition

Packaging

Required Courses:

- 27.311 Principles of Packaging
 - 27.312 Materials and Packages
 - 27.313 Packaging Development
 - 27.314 Packaging for the Environment
- #### Electives (choose 4):
- 23.295 Materials Science
 - 23.416 Statistical Quality Control
 - 23.427 Plant Layout and Materials Handling
 - 23.480 CADes (Computer Aided Design)
 - 27.201 Plastics Material Science I
 - 27.217 Plastics Processing Engineering Laboratory

- 27.315 Elements of Packaging
- 27.418 Product Design
- 69.271 Operations Management
- 70.291 Introduction to Graphic Design
- 70.394 Point of Purchase Design & Packaging

Paralegal Studies

Required Courses:

- 41.103 Introduction to Paralegal Studies
- 41.387 Legal Research Methods
- 41.390 Litigation
- 44.301 Computer Applications for the Legal Profession

Electives (choose 3):

- 41.363 Corporate and Property Law
- 41.370 Real Estate Law
- 41.376 Family Law
- 41.391 Federal Taxation Law
- 41.392 Wills, Trusts and Estates
- 44.287 Legal Writing for Paralegals
- 44.435 Alternative Dispute Resolution
- 44.497 Paralegal Practicum/Internship

Plastics Engineering Technology

Required Courses:

- 27.201 Plastics Materials Science I
- 27.202 Plastics Materials Science II
- 27.217 Plastics Processing Engineering Laboratory
- 27.373 Plastics Mold Engineering I
- 27.401 Processing Technology I
- 27.402 Processing Technology II

Electives (choose 3):

- 27.203 Plastics Materials Science III
- 27.301 Additives for Polymeric Materials
- 27.303 Reinforced Plastics and Composites
- 27.331 Injection Molding
- 27.376 Plastics Mold Engineering II
- 27.403 Physical Properties of Polymers I
- 27.404 Physical Properties of Polymers II
- 27.405 Polymer Characterization
- 27.406 Polymer Structures
- 27.407 Plastics Industry Organization
- 27.418 Product Design
- 27.425 Dynamic Mechanical Properties of Plastics I
- 27.426 Dynamic Mechanical Properties of Plastics II
- 27.440 Commercial Development of Polymeric Material Systems
- 27.451-27.458 Selected Topics I-VII

Spanish

Required Courses:

- 54.234 Advanced Grammar and Syntax
- 54.245 Advanced Spanish Conversation (or
- 54.254 Topics in Conversational Spanish)
- 54.315 Latin American Civilization and Culture

Choose 3 of 6:

- 54.302 Introduction to Latin American Literature
- 54.310 Spanish Civilization and Culture
- 54.320 Special Topics in Spanish Studies
- 54.401 Selected Authors
- 54.409 Twentieth Century Spanish Literature
- 54.412 The Short Story in Latin America

Electives (choose 4):

- 54.211 Intermediate Conversational Spanish I
- 54.212 Intermediate Conversational Spanish II
- 54.221 Reading and Conversing in Spanish I
- 54.222 Reading and Conversing in Spanish II
- 54.301 Introduction to Spanish Literature
- 54.313 Fieldwork in the Spanish Community

Technical Writing

Required Courses:

- 42.401 Principles of Technical Writing (offered in the Fall)
- 42.402 Software Writing (offered in the Spring)
- 42.403 Advanced Software Writing (offered in the Summer)
- 92.202 Microcomputer and Applications Software*

Electives (choose 2):

- 70.245 Desktop Publishing: Layout & Production and 1 Computer Elective**
- OR 2 Computer Electives**

* Note: Students who have previous computer experience may substitute a more advanced computer course for this computer course.

** See Continuing Education Course Catalog for computer courses with a 90. or 92. prefix.

UNIX

Required Courses:

- 92.267 C Programming
 - 92.360 Introduction to Data Structures
 - 92.311 Introduction to the UNIX Operating System
 - 92.312 UNIX Shell Programming
- #### Electives (choose 1):
- 92.268 C++ Programming
 - 92.269 Advanced C++
 - 92.313 UNIX Internals Overview
 - 92.314 UNIX System Interface Programming
 - 92.316 UNIX System Administration
 - 92.318 Advanced UNIX Internals and Tuning

Wastewater Treatment

Required Courses:

- 15.261 Wastewater Treatment Plant Operations I
 - 15.263 Wastewater Treatment Lab I (1 cr)
 - 15.280 Industrial Waste Treatment
 - 15.361 Wastewater Treatment Plant Operations II
 - 15.363 Wastewater Treatment Lab II (1 cr)
- #### Electives (choose 2):
- 15.152 Water Biology
 - 15.388 Pumps and Compressors
 - 15.452 Operation and Maintenance of Wastewater Collection Systems
 - 15.492 Water/Wastewater Plant Management
 - 86.131 Environmental Chemistry I
 - 86.132 Environmental Chemistry II

Water Treatment

Required Courses:

- 15.272 Water Supply and Treatment Operations I
 - 15.274 Water Works Operations Lab I (1 cr)
 - 15.355 Water Distribution Systems
 - 15.372 Water Supply and Treatment Operations II
 - 86.131 Environmental Chemistry I
 - OR 84.121 Chemistry I
- #### Electives (choose 2):
- 15.152 Water Biology
 - 15.374 Water Works Operations Lab II (1 cr)
 - 15.388 Pumps and Compressors
 - 15.492 Water/Wastewater Plant Management
 - 86.132 Environmental Chemistry II
 - OR 84.122 Chemistry II

Windows® Development Programming

Required Courses:

- 92.220 Visual Basic
- 91.281 Introduction to Windows Programming with Object-Oriented Programming Tools
- 91.381 Windows Programming in C and C++, Part I
- 91.382 Windows Programming in C and C++, Part II
- 91.353 Windows Programming for the Design of Interactive Systems
- 91.459 Human Factors in the Design of Interactive Systems
- 91.481 Windows Practicum/Internship

Additional Certificate Programs:

UMass Lowell also offers certificate programs in:

- Accounting
- Banking
- Electro-Optics
- Purchasing Management
- Quality Assurance
- Security Management

For more information and a detailed program packet, please call (508) 934-2470.